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Cultural Diversity Climate in School: A Meta-Analytic Review of Its Relationships With Intergroup, Academic, and Socioemotional Outcomes

Lisa Bardach[1, 2], Sebastian Röhl[3, 4], Sophie Oczlon[5], Aki Schumacher[2], Marko Lüftenegger[5, 6], Rosa Lavelle-Hill[7, 8], Miriam Schwarzenthal[9], and Steffen Zitzmann[10]

[1] Department of Psychology, University of Giessen
[2] Hector Research Institute of Education Sciences and Psychology, University of Tübingen
[3] Institute of Education, University of Education, Freiburg
[4] Institute of Education, University of Tübingen
[5] Department of Teacher Education, Centre for Teacher Education, University of Vienna
[6] Department of Developmental and Educational Psychology, Faculty of Psychology, University of Vienna
[7] School of Psychology, University of Copenhagen
[8] Copenhagen Center for Social Data Science, University of Copenhagen
[9] School of Education, University of Wuppertal
[10] Department of Psychology, Medical School Hamburg

This first-of-its-kind meta-analysis (N = 79 studies; 56,552 students; k = 640 effects) provides a comprehensive assessment of five cultural diversity climate approaches that capture different ways of addressing cultural diversity in K-12 schools. We examined how intergroup contact theory's optimal contact conditions, multiculturalism climate, colorblind climate, critical consciousness climate, and polyculturalism climate were associated with children's and adolescents' intergroup outcomes (intergroup attitudes, cross-group friendships, experienced discrimination), academic outcomes (academic achievement, motivation, engagement), and socioemotional outcomes (belonging, well-being). Results from meta-analytic random-effects models revealed the largest and most consistent effects for optimal contact conditions, with small-to-medium-sized effects and significant relationships with all outcomes. Multiculturalism climate was significantly and positively related to intergroup attitudes, achievement, motivation, and belonging (mostly, these were small effect sizes). Critical consciousness climate (small effect sizes) and polyculturalism climate (small-to-medium effect sizes) were correlated with both academic and socioemotional outcomes. Colorblind climate was not significantly associated with any outcomes. Moderator analyses revealed that contact conditions exhibited larger effects in secondary education compared with primary education and in the United States compared with Europe. The percentage of majority group members moderated some relationships (e.g., contact conditions had smaller effects when there were more majority group members in the sample). Significantly larger effects emerged for student-reported colorblind climate measures than for teacher-reported measures. Overall, this meta-analysis provides a highly nuanced view of the most robust evidence for the associations between cultural diversity climate and outcomes that are critical for positive child and youth development to date.

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Lisa Bardach https://orcid.org/0000-0002-2168-3117
Sebastian Röhl https://orcid.org/0000-0003-2573-541X

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Correspondence concerning this article should be addressed to Lisa Bardach, Department of Psychology, University of Giessen, Otto-Behaghel-Straße 10F, 35394 Giessen, Germany. Email: Lisa.Bardach@psychol.uni-giessen.de

Public Significance Statement
This meta-analysis shows that cultural diversity climate approaches describing different ways of addressing cultural diversity in schools are related to children's and adolescents' intergroup outcomes, academic outcomes, and socioemotional outcomes. It is important for schools to implement beneficial cultural diversity climate practices systematically (based on intergroup contact theory's optimal contact conditions, multiculturalism climate, critical consciousness climate, and polyculturalism climate) to establish inclusive and supportive environments for students with diverse backgrounds.

Keywords: cultural diversity climate, intergroup contact theory, multiculturalism, colorblind, critical consciousness

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Societies in many parts of the world are becoming increasingly culturally, ethnically, racially, and religiously diverse. For example, by 2044, more than half of all Americans are projected to belong to a minority group, defined as any group other than non-Hispanic White (U.S. Census Bureau, 2019). Similarly, societies in Europe are diversifying; for instance, in Germany, about one third of school-aged students have an immigrant background (i.e., either the students themselves or one of their parents was born in a country other than Germany; Organisation for Economic Co-operation and Development [OECD], 2019). Cultural, ethnic, racial, and religious minorities, as well as immigrants and their direct descendants, are confronted with exclusion, prejudice, and discrimination, and they face social inequities in many societies (European Commission, 2019; United Nations Committee on the Elimination of Racial Discrimination, 2021), thus placing them at risk for lower well-being, mental health, and academic achievement (Benner et al., 2018; Coll et al., 1996; Dimitrova et al., 2016). At the same time, growing up in a culturally diverse environment also offers unique opportunities for engaging in intercultural interactions, which can be a major resource for all children's and adolescents' intergroup relations and identity development, as well as for their socio-emotional and academic adjustment (Rivas-Drake et al., 2014; Suárez-Orozco et al., 2018; Tropp & Prenovost, 2008; Zitzmann, Loreth, et al., 2022).

Schools are important developmental contexts for children and adolescents (e.g., Eccles & Roeser, 2011; Eckstein & Crocetti, 2021; Miklikowska et al., 2021; Rosenthal et al., 2019). Thus, how schools respond to the challenges and opportunities that arise from diversity has profound implications for the quality of intergroup contact, individual students' abilities to thrive at school, and their later life paths, as well as for the economic and social well-being of all members of society (OECD, 2018). An important school-based factor in this regard is the school's *cultural diversity climate*.[1] We define cultural diversity climate as approaches (e.g., multiculturalism, colorblindness) for addressing cultural diversity in school settings. These approaches manifest in the practices, policies, norms, and general atmosphere in schools, and they shape interactions among students as well as between students and teachers or students and other school personnel (e.g., Abacioglu, Isvoranu, et al., 2019; Byrd, 2017; Phalet & Baysu, 2020; Schachner, 2019; Verkuyten & Thijs, 2013). Ample research has been conducted on relationships between a school's cultural diversity climate and a number of outcomes, such as intergroup attitudes and relationships (e.g., prejudice, discrimination; Benner & Graham, 2013), academic outcomes (e.g., academic achievement, school motivation; Garcia & Chun, 2016), and socioemotional outcomes (e.g., sense of belonging, well-being; Polk et al., 2020). Nevertheless, inconsistencies in the conceptualization, measurement, and labeling of different cultural diversity climate approaches have prevented a more complete understanding of cultural diversity climate and have stifled theoretical progress in this field. Similarly, inconsistencies in the patterns of relationships with outcome variables—such as positive, negative, and zero relationships between a school's multiculturalism climate and discrimination (e.g., Byrd, 2017; Schwarzenthal et al., 2018)—can impede the ability to draw confident conclusions about the relevance of cultural diversity climate for these outcomes. In addition, it is currently impossible to infer the actual practical significance of the associations between the cultural diversity climate in schools and different outcomes, as meta-analytic investigations that have systematically synthesized these studies are lacking. Against this background, the current meta-analysis was conducted to determine the strengths of the relationships between cultural diversity climate approaches in K-12 schools and students' intergroup, academic, and socioemotional outcomes. We focused on five cultural diversity climate approaches (optimal contact conditions from intergroup contact theory, multiculturalism climate, colorblind climate, critical consciousness climate, and polyculturalism climate). In addition, we tested moderators of the relationships between the cultural diversity climate approaches and the outcomes.

Cultural Diversity Climate Approaches in Schools

Scholars have coined a variety of terms to describe cultural diversity climate approaches. This meta-analysis builds primarily on cultural diversity climate approaches from the psychological literature and uses the corresponding terminology (e.g., Plaut et al., 2018; Rosenthal & Levy, 2010; Tropp & Pettigrew, 2005a). With the aim of providing the most comprehensive overview of cultural diversity climate approaches to date, we complement the focus on intergroup contact theory's "classical" optimal contact conditions and the relatively well-known approaches of multiculturalism climate and colorblind climate by adding critical consciousness climate and polyculturalism climate. Critical consciousness climate

[1] Whereas race is a commonly used term in the United States and other parts of the world, in discussing differences between racial groups, it became taboo to use the term race in most European countries after the Holocaust (e.g., Jugert et al., 2022; Motti-Stefanidi & Masten, 2013; Schachner et al., 2021). For our work, we therefore refer to cultural diversity climate and not to racial climate, interracial climate, or other terms that have been used to describe a school's cultural diversity climate.

and polyculturalism climate presumably overcome some of the limitations of other cultural diversity climate approaches and have more recently been included in research on the cultural diversity climate in school (e.g., Byrd, 2017; Schachner et al., 2021). Below we describe the five cultural diversity climate approaches that were the focus of this meta-analysis. For some of these cultural diversity climate approaches, we further distinguish between their different forms (i.e., different aspects subsumed under a cultural diversity climate approach).

Intergroup Contact Theory's Optimal Contact Conditions: Equal Status, Common Goals, Cooperation, Support From Authorities, and Association

The social–psychological intergroup contact theory has served as a major inspiration for research on the cultural diversity climate in schools. The theory states that more (positive) intergroup contact fosters positive intergroup attitudes (Paolini et al., 2024; Pettigrew & Tropp, 2006), particularly if specific conditions are met: *equal status*, *common goals*, *cooperation*, and *support from authorities* (e.g., Allport, 1954; Pettigrew, 1971; Pettigrew & Tropp, 2006; Tropp et al., 2022). First, different groups have equal status in a particular situation. In school settings, this condition includes, for example, the absence of differential treatment on the basis of students' ethnic, cultural, racial, or religious background by the teacher or fellow classmates (i.e., the absence of more maladaptive and unfair treatment of minorities). Second, common goals are present in situations, and tasks require an active, goal-oriented effort by members of minority and majority groups[2] to reach these goals. Third, there is cooperation between minority and majority group members with no intergroup competition. Fourth, support from authority figures (e.g., the teacher or the principal) establishes norms of acceptance, facilitating positive intergroup contact (Pettigrew, 1998). Later, *association* (also referred to as friendship potential or acquaintance potential) was added as a key element for facilitating positive intergroup contact. Here, a contact situation must provide individuals from different cultural groups with the opportunity to become friends (Pettigrew, 1998).

Multiculturalism Climate: Valuing and Learning About Cultures and Cultural Diversity

Whereas research on intergroup contact theory's optimal contact conditions has tended to focus on ensuring equal status among different groups and has paid less attention to differences, a *multiculturalism climate* explicitly values diversity, differences, and the importance of concepts such as "culture" as defining aspects of who people are (e.g., Rosenthal & Levy, 2010; Sasaki & Vorauer, 2013). In this meta-analysis, we distinguish between two forms of multiculturalism climate. First, multiculturalism climate as a cultural diversity climate approach in school often centers on teaching about and encouraging students to learn about different cultures. Hence, a multiculturalism climate prevails if students can learn about and draw attention to cultural variations between groups, thus helping them better understand the lives, experiences, practices, and perspectives of diverse others (Rosenthal & Levy, 2010; Schachner et al., 2021). We label this form of multiculturalism climate the *important differences* form (see, e.g., Rosenthal & Levy, 2010).

By contrast, some studies have referred to a multiculturalism climate in terms of students learning about, being affirmed in, and valuing their own cultures (e.g., Byrd, 2017). Such a climate can be achieved by integrating examples from students' cultures into curricula and teaching practices and by providing opportunities for students with diverse backgrounds to learn about the histories of their own cultures (from herein labeled the *being affirmed in one's own culture* form of a multiculturalism climate). The form of a multiculturalism climate of being affirmed in one's own culture helps minority students maintain their own cultures and traditions (e.g., immigrants in a new country or nondominant groups in relation to the dominant culture; Rosenthal & Levy, 2010; see also, e.g., Berry & Kalin, 1995). At the same time, because a multiculturalism climate in the form of being affirmed in one's own culture pays attention to and integrates elements of minority cultures into everyday school practice, it prompts all students to value and appreciate the positive contributions different cultural groups have made to society (Rosenthal & Levy, 2010; see also, e.g., Ryan et al., 2007; Wolsko et al., 2000). Whereas the important differences form of a multiculturalism climate primarily stems from the (social–)psychological literature and is aimed at improving intergroup relations, the being affirmed in one's culture form originates from the literature on ethnic/racial socialization (e.g., Byrd, 2017; D. Hughes et al., 2006). The ethnic/racial socialization literature often focuses on parenting or educator practices that support the resilience and positive development of minority children facing discrimination and inequity and helps them develop and maintain a positive ethnic–racial identity and affiliation (see Huguley et al., 2019, for a meta-analysis on parents' ethnic–racial socialization of their children). Still, in many instances, the two forms of multiculturalism are combined into one measure, and researchers have cautioned that particularly in applied settings (e.g., schools), the different forms of a multiculturalism climate are not always easy to tease apart (see also Rosenthal & Levy, 2010).

Colorblind Climate: Deemphasizing Group Memberships and Diversity

The colorblind approach suggests that prejudices derive from people's irrelevant and superficial emphasis on group categories. Thus, a *colorblind climate* at school is aimed at deemphasizing group memberships (e.g., Rosenthal & Levy, 2010; Ryan et al., 2007; Wolsko et al., 2000). Conceptually, colorblind climate has been linked to intergroup contact theory's optimal contact conditions in that supporting contact, cooperation, and equality can go along with deliberately ignoring or neglecting cultural variations (see, e.g., Pettigrew, 1998; Schachner et al., 2016; Schofield, 2010).

A more generic form of colorblind climate captures climate and teaching practices that simply entail ignoring or avoiding discussions of group categories (from herein labeled the *ignoring differences* form; see also, e.g., Civitillo et al., 2021). In addition,

[2] Depending on the context and the composition of the sample in a study, "minority group" and "majority group" could refer to ethnic, cultural, religious, or racial minority or majority groups. Due to differences between studies and as the aim of this meta-analysis is to summarize the current state of research across many studies, we use the general terms "majority group members" and "minority group members" throughout the article.

psychological research has examined three distinct types of colorblindness as personal ideologies that are also represented in the respective forms of colorblind climate: the *similarities*, *assimilation*, and *uniqueness* forms (see Levy et al., 2005; Rosenthal & Levy, 2010, for overviews). A colorblind approach can ignore or avoid discussions of group categories by highlighting similarities among groups and a common ingroup identity (Rosenthal & Levy, 2010; see also early research on the common ingroup identity model, Gaertner & Dovidio, 2000). A colorblind climate of the similarities form, for instance, includes teaching students with diverse backgrounds that they are "all the same at heart" (Schachner et al., 2021, p. 8). The assimilation form of colorblindness proposes that all groups should adopt the mainstream, dominant culture (Neville et al., 2000; Rosenthal & Levy, 2010). In a school with a colorblind climate of the assimilation form, for example, students are forbidden to speak a language other than the country's official language (e.g., Baysu et al., 2016). In its uniqueness form, colorblindness focuses on individual differences and on each person's uniqueness instead of group categories (Rosenthal & Levy, 2010). An example of a colorblind climate of the uniqueness form is when teachers communicate to students that the teachers care about the students' individual talents, without distinguishing between students with different backgrounds (e.g., Celeste et al., 2019).

Critical Consciousness Climate: Critically Reflecting on and Challenging Racism and Inequities

Critical consciousness describes the personal awareness of systemic inequities as well as a sense of efficacy and engagement in action against oppression (Freire, 1973, 2000; Heberle et al., 2020; Watts et al., 2011). A *critical consciousness climate* at school therefore centers on teaching children and adolescents about and empowering them to recognize and redress social inequities (e.g., Bañales, Aldana, et al., 2021; Byrd, 2017; Schwarzenthal et al., 2022; Seider & Graves, 2020). Although this meta-analysis focuses on a critical consciousness climate that is tied to teaching and learning about differences in power and privilege on the basis of individuals' cultural, ethnic, or racial backgrounds, a critical consciousness climate can, for example, also center on gender, sexual orientation, social class, and their intersections. In research on cultural diversity climate, some authors have subsumed critical consciousness climate under the broader category of multiculturalism climate described above. Nevertheless, we view multiculturalism climate and critical consciousness climate as sufficiently distinct to be considered separately.

Polyculturalism: Focusing on Connections Between Groups and Cultures

Polyculturalism indicates that cultures and individuals are the products of past and present interactions that take place between different groups and that everyone is inherently connected to people from other cultures due to intersecting histories (Kelley, 1999; Prashad, 2003; Rosenthal & Levy, 2010). In a school with a *polyculturalism climate*, discussions about how people can be influenced by more than one culture or about how different cultures influence each other are encouraged (e.g., Schachner et al., 2021). Polyculturalism is similar to multiculturalism, as it recognizes individuals' cultural, ethnic, or racial backgrounds. Instead of focusing on the differences among different cultural groups (see, e.g., the important differences form of multiculturalism climate), however, polyculturalism climate emphasizes the connections among groups due to historical and present interactions (Rosenthal et al., 2016; Rosenthal & Levy, 2010). So far, polyculturalism climate has rarely been studied in school-based research on cultural diversity climate (for a notable exception, see, e.g., Juang et al., 2020).

Table 1 provides examples of how the five cultural diversity climate approaches have been measured. We introduced the distinct cultural diversity climate approaches separately for conceptual clarity. Nevertheless, these approaches can coexist in educational settings, and educational practitioners likely apply mixtures of the different approaches. Thus, schools cannot be categorized as belonging exclusively to one approach, and instead, different cultural diversity climate approaches may be present in the same school to varying degrees (e.g., Celeste et al., 2019; Schwarzenthal et al., 2018).

Cultural Diversity Climate Outcomes

Nested in the broader societal and political spheres, schools are an important context for academic and socioemotional development, but they are also an important acculturative context and major arena for intercultural contact (Schachner, 2019). In keeping with relevant theoretical frameworks and prior work, in the current meta-analysis, we looked at diversity-specific and acculturative tasks that are relevant to thriving in and navigating culturally diverse environments (i.e., intergroup outcomes) as well as outcomes that refer to universal developmental tasks (i.e., academic outcomes, socioemotional outcomes; e.g., Coll et al., 1996; Motti-Stefanidi & Masten, 2013; Phalet & Baysu, 2020; Suárez-Orozco et al., 2018; Tropp et al., 2022). The selection of outcomes was also informed by their theoretical and empirical links to specific cultural diversity climate approaches. For instance, the initial reasoning behind intergroup contact theory's optimal contact conditions was centered on promoting positive intergroup attitudes, and intergroup outcomes are thus conceptually most proximal to optimal contact conditions (e.g., Pettigrew & Tropp, 2006). A multiculturalism climate at schools (in the being affirmed in one's culture), by contrast, has often been touted as an important principle for fostering minority children's academic and socioemotional adjustment (e.g., Del Toro & Wang 2021b).

First, with regard to intergroup outcomes, we focused on (a) intergroup attitudes (e.g., prejudice and stereotypes) and two prime characteristics of intergroup relations and interactions, namely, (b) cross-group friendships and (c) experiences of discrimination (e.g., Beelmann & Heinemann, 2014; Benner et al., 2018; R. Brown, 2010; Tropp et al., 2022). Even very young children show biases in favor of their own ethnic, racial, or cultural groups, and early experiences with members of other groups are influential in shaping children's intergroup attitudes and relations (Al Ramiah et al., 2013; Killen et al., 2022; Nesdale, 2017; Tropp et al., 2022). Schools formally and informally socialize students with respect to diversity, and how cultural diversity is approached at school thus affects young children's intergroup attitudes and relations (e.g., Abacioglu, Zee, et al., 2019; Jargon & Thijs, 2021; Schwarzenthal et al., 2018; Tropp et al., 2016). The adolescent years are characterized by significant social–cognitive changes, and adolescents become increasingly aware of cultural diversity, social norms, and discrimination

Table 1
Cultural Diversity Climate Approaches in School and Their Measurement

Cultural diversity climate approach	Sample item
Intergroup contact theory's optimal contact conditions	Authority support: "In this class the teacher encourages children to make friends with children from other countries" (Jugert et al., 2011, p. 829); "The principal here likes students to have friends from different races" (Byrd, 2015, p. 15). Equal status: "All children in this class are treated equal no matter what country they are from" (Jugert et al., 2011, p. 829); "Does the teacher sometimes talk about being fair to children from different countries?" (Verkuyten & Thijs, 2004, p. 261); "In my school all students are included in different activities, regardless of their nationality" (Pavin Ivanec et al., 2023, p. 7288). Cooperation: "Students of different races/ethnicities study together" (Byrd, 2017, p. 709); "Students in my class from different heritage cultures work well together" (Schachner et al., 2021, p. 8). Common goals: "Students of different races in this class are all working together for the same things" (Molina & Wittig, 2006, pp. 494–495). Association: "The children of immigrant background in this class get along well with the German children" (Brenick et al., 2018, p. 2 [Online Supplemental Materials]); "Students of different races/ethnicities trust each other" (Byrd, 2017, p. 709).
Multiculturalism climate	Important differences form: "In school you get to do things that help you to learn about people of different races and cultures" (Byrd, 2017, p. 710); "How often do you learn things about people from other countries, e.g., music, art, customs, etc.?" (Stefanek et al., 2015, p. 259); "At school we talk about how people from different cultures live" (Schachner et al., 2021, p. 8). Being affirmed in one's own culture form: "At your school, you have chances to learn about the history and traditions of your culture"; "In your classes you've learned new things about your culture" (Byrd, 2017, p. 710; "My teacher(s) use examples from my culture when teaching" (Dickson et al., 2016, p. 143).
Colorblind climate	Ignoring differences form: "Your school encourages you to ignore racial/ethnic differences"; "People here think it is better not to pay attention to race/ethnicity" (Byrd, 2017, p. 710). Assimilation form: "In my school speaking another language than Dutch is not tolerated" (Baysu et al., 2021, p. 372). Similarities form: "In class we learn that people of different backgrounds are all the same at heart"; "In class we learn that similarities are more important than cultural differences" (Schachner et al., 2021, p. 8). Uniqueness form: "Emphasis on individual talent" (Celeste et al., 2019, p. 1608).
Critical consciousness climate	"Your teachers encourage awareness of social issues affecting your culture"; "In your classes you have learned how race/ethnicity play a role in who is successful" (Byrd, 2017, p. 710); "In school we talk about how people from certain heritage cultures have to work harder to get a good job"; "In school we talk about how the German school system does not offer the same opportunities to all students" (Schachner et al., 2021, p. 8).
Polyculturalism climate	"In class we learn about how cultures in Europe and the rest of the world have influenced and continue to influence each other," "In school we talk about how people can be influenced by more than one culture" (Schachner et al., 2021, pp. 8–9).

(Abrams & Rutland, 2008; C. S. Brown, 2017; Karataş et al., 2023; Rutland et al., 2010). Schools thus remain an important regulatory context for structuring intergroup interactions in adolescence (e.g., Tropp et al., 2016, 2022). Furthermore, intergroup outcomes play different roles, depending on students' positions as minority or majority group members (Schwarzenthal et al., 2023). Majority group members often have more negative attitudes toward minority group members than minority group members have toward majority group members, and intergroup attitudes have thus mainly been examined in majority group members (Leach & Livingstone, 2015). By contrast, across developmental periods, minority students are more often exposed to discriminatory practices than majority students are. Such discriminatory practices can severely harm developmental progress and have been identified as key risk factors for minority children and youth (e.g., Benner et al., 2018; Coll et al., 1996; Suárez-Orozco et al., 2018). Cross-group friendships uniquely contribute to children's and adolescents' social adjustment, counteract negative intergroup attitudes (e.g., Graham et al., 2014; Killen et al., 2022; Tropp et al., 2016; Tropp & Pettigrew, 2005b), and are referred to as important acculturative tasks for students from minority groups (Suárez-Orozco et al., 2018).

Second, academic progress is a universal developmental task in childhood and adolescence (e.g., Suárez-Orozco et al., 2018), and success in school influences an individual's life chances, access to higher education institutions, and future employment opportunities. Yet, pervasive gaps in school achievement between cultural, ethnic, and racial minority and majority groups persist in many countries (e.g., Del Toro & Wang, 2021b; OECD, 2017; Phalet & Baysu, 2020). It is thus imperative to identify school factors and practices—including cultural diversity climate approaches—that can help all students thrive academically (e.g., Schachner et al., 2019). Building on a multidimensional understanding that argues that adaptive academic functioning cannot be restricted to one domain (e.g., achievement) and instead requires a broader approach that draws on a multitude of additionally relevant academic aspects (see, e.g., Bardach et al., 2022; Fredricks et al., 2005), we considered (a) academic achievement, (b) motivation (e.g., interest in school), and (c) school engagement (e.g., paying attention in class) in this meta-analysis. Motivation and engagement have been found to be both predictive of academic achievement and important on their own, as they contribute to students' educational functioning and long-term commitment to learning (e.g., motivation predicts the decision to

pursue higher education; Salmela-Aro, 2020). During adolescence, academic engagement and motivation often decline (e.g., Eccles & Roeser, 2011; Scherrer & Preckel, 2019), highlighting the importance of identifying supportive contextual characteristics, such as cultural diversity climate approaches, that can help adolescents with diverse backgrounds sustain their motivation and engagement.

Third, socioemotional adaptation is a critical indicator of psychological adjustment in childhood and adolescence (e.g., Suárez-Orozco et al., 2018), and like academic progress, it represents a universal developmental task (e.g., Schachner, 2019). Schools play a crucial role in children's and adolescents' socioemotional development; yet, students from minority groups are more often exposed to experiences (e.g., discrimination) that can threaten their well-being, and these students have been shown to report lower levels of belonging at school (e.g., Celeste et al., 2019; Voight et al., 2015). Thus, whereas minority group students may be able to successfully cope on the surface (i.e., they show sufficient levels of academic functioning and consequently "do well"), they can suffer from underlying distress that might not be detected by teachers or peers (i.e., they do not "feel well"; Suárez-Orozco et al., 2018). This phenomenon led us to include (a) feelings of belonging (e.g., school belonging, positive social relationships in school) and (b) well-being (e.g., life satisfaction, self-esteem)[3] as socioemotional outcomes in our meta-analysis. Figure 1 provides a graphical representation of the theoretical framework underlying the outcomes. The following sections outline the theoretical assumptions and previous research on the relationships between each cultural diversity climate approach and the outcomes.

Effects of Intergroup Contact Theory's Optimal Contact Conditions

Intergroup contact theory and its optimal contact conditions are among the best researched psychological principles for counteracting negative intergroup attitudes and fostering positive intergroup contact (e.g., Beelmann & Heinemann, 2014; Pettigrew, 2021; Pettigrew & Tropp, 2006). In research in schools, practices derived from intergroup contact theory have been associated with, for example, reduced prejudice and beneficial intergroup relations, including cross-group friendships and decreased discrimination experiences (e.g., Molina & Wittig, 2006; Schachner et al., 2016; Thijs & Verkuyten, 2013). Establishing optimal contact conditions seems to be particularly effective in promoting positive intergroup attitudes among members of majority groups and in motivating majority group members to befriend minority group members (Tropp & Pettigrew, 2005a; see also, e.g., Jugert et al., 2011; Schwarzenthal et al., 2018; Tropp et al., 2016). Such findings may be due to status differences between the groups: For minority group members, regular reminders of their group's devalued status in society represent enduring features of intergroup relations, thus inhibiting the degree to which intergroup contact is associated with positive intergroup attitudes and cross-group friendships, relative to the effects observed for majority groups (see Tropp & Pettigrew, 2005a). By contrast, associations between optimal contact conditions and decreases in experienced discrimination have been presumed to be larger for minority than for majority group members, as minority group members typically experience more discrimination and as improved intergroup contact and intergroup attitudes of majority group members should decrease their discrimination against minority group members (e.g., Baysu et al., 2016; Schwarzenthal et al., 2018).

There is evidence that practices based on intergroup contact theory's optimal contact conditions are positively associated with academic and socioemotional outcomes for all students (e.g., Benner & Graham, 2013; Brown & Jones, 2004; Griffin et al., 2017; Polk et al., 2020). Nonetheless, compared with students from majority groups, students from minority groups tend to feel less welcome and less included in school in general, and teachers often treat them less favorably (e.g., Bottiani et al., 2017), which conveys to them that their minority identity is devalued (Phalet & Baysu, 2020; Verkuyten et al., 2019; see social identity perspectives, R. Brown & Hewstone, 2005; Tajfel & Turner, 1986). Positive contact resulting from implementing intergroup contact theory's optimal contact conditions has therefore been suggested to be especially advantageous for minority group members and their positive academic and socioemotional development (i.e., even more pronounced positive effects for minority than for majority group members; Phalet & Baysu, 2020; Thijs & Verkuyten, 2014).

Hypotheses

For our meta-analysis, we hypothesized that optimal contact conditions would be positively related to all intergroup, academic, and socioemotional outcomes. Whereas we hypothesized that optimal contact conditions would be beneficial for all students, that is, students from both minority and majority groups, we also hypothesized that some effects would be larger for either majority or minority groups. Specifically, we hypothesized that intergroup contact theory's optimal contact conditions would show larger relationships with positive intergroup attitudes and cross-group friendships for majority group members. Intergroup contact theory's optimal contact conditions were hypothesized to be more strongly related to lower levels of experienced discrimination for minority group members. For academic and socioemotional outcomes, we hypothesized that positive associations with intergroup contact theory's optimal contact conditions would be higher for minority group members.

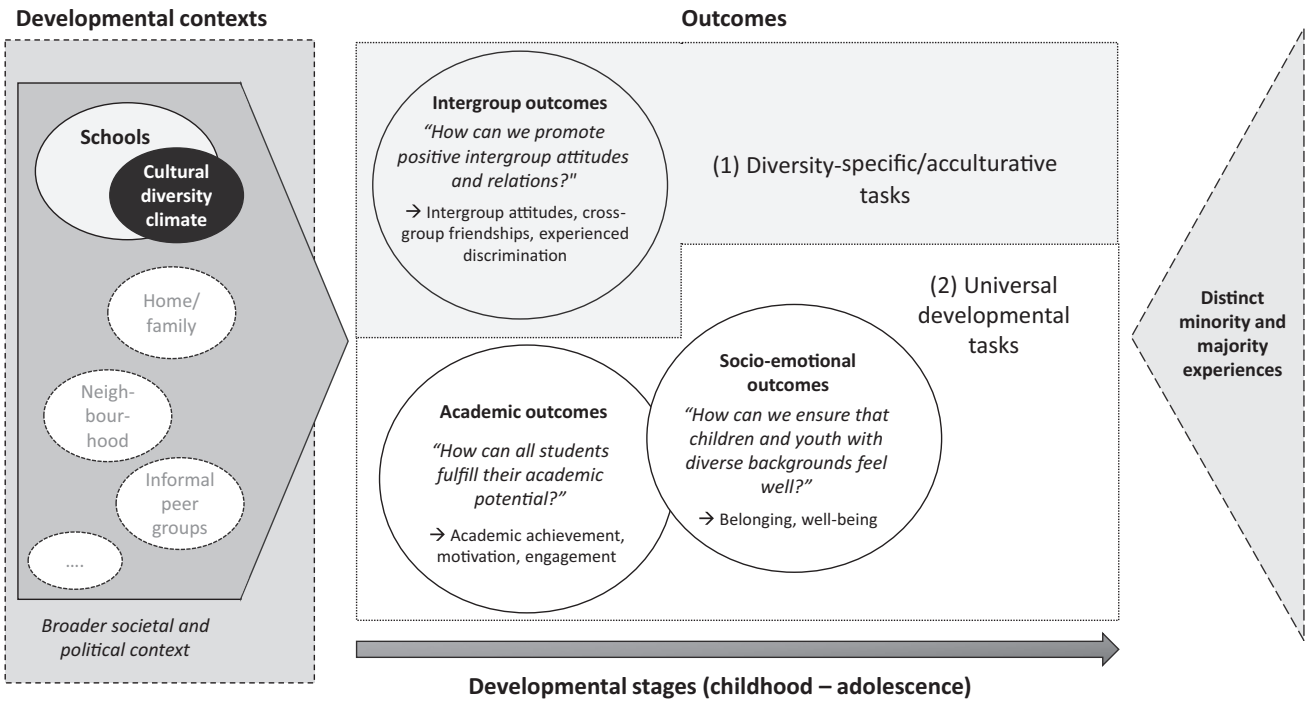
Effects of Multiculturalism Climate

Conceptually, a school environment that places an emphasis on learning about and valuing different cultures and cultural diversity (e.g., Rosenthal & Levy, 2010) implies a positive orientation toward outgroups and should thus be linked to more positive intergroup attitudes and relationships (e.g., Juang et al., 2020; Konings et al., 2021; Schwarzenthal et al., 2018; Vervaet et al., 2018). Nonetheless, minority group members are often accustomed to navigating between two or more cultures (e.g., at home, at school, with their peers), tend to already be more aware of diversity, and tend to personally endorse values relating to multiculturalism to a greater extent than majority group members do (e.g., Verkuyten, 2005). For students from the majority group, engaging with and learning about other cultures is less typical. For these reasons, when a

[3] Some conceptualizations of well-being also include social aspects, such as positive relationships with others. However, for the current meta-analysis, we decided to also analyze these aspects separately, as such an approach is more informative and is the common approach in research on cultural diversity climate in schools.

Figure 1

Theoretical Framework for the Outcomes Addressed in This Meta-Analysis, Focusing on Diversity-Specific/Acculturative Tasks and Universal Developmental Tasks in Childhood and Adolescence



Note. We acknowledge that schools are only one—albeit an important—developmental context and that other developmental contexts, such as the family or informal peer groups, as well as the broader societal and political context, also exert influences on diversity-specific/acculturative and universal outcomes. Furthermore, the figure illustrates that effects of a school's cultural diversity climate can vary across developmental periods and are colored by the distinct experiences that students from minority and majority groups encounter.

multiculturalism climate prevails at school, it has been proposed to yield larger effects on positive intergroup attitudes in majority than in minority group members (Leslie et al., 2020; Schwarzenthal et al., 2020)—as long as the majority group members do not feel excluded by the multiculturalism (Plaut et al., 2018, 2011).

Moreover, unresolved issues and inconsistent findings on the link between a multiculturalism climate in schools and discrimination, ranging from negative to zero to positive relationships (e.g., Abacioglu, Isvoranu, et al., 2019; Byrd, 2017; Oczlon et al., 2021; Schachner et al., 2021; Schwarzenthal et al., 2018), make deriving clear predictions difficult. Although multiculturalism can and has been shown to reduce discrimination (see, e.g., Leslie et al., 2020; Rosenthal & Levy, 2010), some researchers have cautioned that multiculturalism may backfire and, under certain circumstances, even increase discrimination (Plaut et al., 2018; Rosenthal & Levy, 2010; Schachner et al., 2021; Schwarzenthal et al., 2018). Plaut et al. (2018), for example, outlined that multiculturalism can create an illusion of fairness and nondiscrimination and can spark hostility, especially in majority group members, as they may feel threatened by multiculturalism. Some scholars have furthermore argued that a strong multiculturalism climate may simply increase awareness of discrimination that is already occurring and, relatedly, self-perceived levels of experienced discrimination (e.g., Schachner et al., 2021; Thijs & Verkuyten, 2013). Overall, considering the contrasting findings across individual empirical studies and the diverging theoretical assumptions about the link between a school's multiculturalism climate and discrimination, there is a need for a systematic investigation to synthesize findings from existing research.

Furthermore, a multiculturalism climate can be presumed to positively affect all students' academic and socioemotional outcomes, as it transmits the messages that differences are valued and that schools are places where students from all backgrounds can thrive. In accordance with these ideas, multiculturalism climate has been shown to be related to more positive academic and socioemotional outcomes among students from majority and minority groups in prior research (see, e.g., Chun & Dickson, 2011; Del Toro & Wang, 2021a; Schachner et al., 2019). Nonetheless, as students from minority groups typically experience more social identity threats, multiculturalism-climate-related practices that value minority identities should be particularly beneficial for minority group members and their academic and socioemotional development (e.g., Byrd, 2017; Celeste et al., 2019; Derks et al., 2007).

Hypotheses

We hypothesized that a multiculturalism climate would be positively related to all intergroup, academic, and socioemotional outcomes, with one exception. Due to inconsistent prior findings and contrasting theoretical assumptions, we did not specify

hypotheses on how multiculturalism climate would be linked to experienced discrimination. With respect to potentially differentiated effects between minority and majority group members, we hypothesized that multiculturalism climate would show larger relationships with positive intergroup attitudes for majority group members. For academic and socioemotional outcomes, we hypothesized that positive relationships with multiculturalism climate would be larger for students from minority groups.

Effects of Colorblind Climate

A colorblind climate is aimed at minimizing and ignoring differences, thus potentially removing the plausibility of racism and, consequently, the opportunity to address it. Therefore, a colorblind climate may increase the risk of experiencing discrimination (for minority group members) or holding negative intergroup attitudes (for majority group members; Apfelbaum et al., 2010; Leslie et al., 2020; Plaut et al., 2018). As a colorblind climate is identity-threatening for minority group members, it should be detrimental for their academic and socioemotional development (see also, e.g., Baysu et al., 2021). In particular, in school, a colorblind climate of the assimilation form and a colorblind climate of the ignoring differences form should yield negative effects on minority students' academic and socioemotional outcomes, whereas students from majority groups who belong to the dominant culture might not be adversely affected (e.g., Badea et al., 2015; Celeste et al., 2019; Gieling et al., 2014; Rosenthal & Levy, 2010). By contrast, a colorblind climate that emphasizes commonalities between groups (similarities form) or one that emphasizes individual differences (uniqueness form) has been found to hold some promise in school settings, at least in the short run, as indicated by, for example, positive relationships with motivation and engagement for both minority and majority group members (e.g., Schachner et al., 2021).

Hypotheses

For an overall colorblind climate, without distinguishing between its different forms, we hypothesized zero effects, as potentially differentiated effects of the assimilation form and ignoring differences form (negative) and the similarities form and uniqueness form (positive) may cancel each other out. As colorblind climates of the assimilation and ignoring differences forms are presumably particularly detrimental for minority students' academic and socioemotional development, we hypothesized larger negative effects for minority group members. Furthermore, both the assimilation and ignoring differences forms may give rise to higher levels of negative intergroup attitudes among majority group members and higher levels of experienced discrimination among minority group members (e.g., Badea et al., 2015; Gieling et al., 2014).

Effects of Critical Consciousness Climate

Freire (1973) and Freire (2000) proposed that open discussions about social inequities can foster minority group members' awareness of discrimination and empower them to redress inequities. A school's critical consciousness climate, which entails learning about racism, inequity, and the negative experiences and circumstances of minority groups, presumably positively affects (majority) students' understanding and valuing of fairness, leading to greater acceptance of other groups and more positive intergroup attitudes (e.g., Aboud & Levy, 2000; J. M. Hughes et al., 2007). A critical consciousness climate at school could furthermore decrease students' experiences of discrimination (especially minority students), possibly by fostering more positive outgroup attitudes among fellow students (especially majority students; e.g., J. M. Hughes et al., 2007). Conversely, due to drawing attention to differences and inequities, critical consciousness climate may also go along with increased levels of (perceived) discrimination among children and youth who become more sensitized to personal experiences of discrimination (see, e.g., Byrd, 2017; Schachner et al., 2021). Similar to research on the multiculturalism climate and discrimination, findings regarding critical consciousness in schools and discrimination have been inconclusive so far (e.g., Byrd, 2017; Schachner et al., 2021).

Furthermore, a critical consciousness climate at school has been linked to higher levels of academic outcomes, such as higher achievement, intrinsic motivation, and engagement (see, e.g., Byrd, 2017; Juang et al., 2020). Because a school or classroom that is characterized by a critical consciousness climate encourages students to challenge inequities and oppressive systems, teaches students that change is possible, and shows them how they can engage in action (Seider & Graves, 2020), students may feel empowered, which may translate into higher socioemotional outcomes (Byrd, 2017; see also, e.g., Maker Castro et al., 2022, for a recent review on personal critical consciousness and well-being). As an identity-conscious approach, a critical consciousness climate may help students, particularly minorities (e.g., Heberle et al., 2020), thrive on both academic and socioemotional levels, possibly by enhancing positive affect that is related to their cultural, ethnic, and racial backgrounds (e.g., Rivas-Drake et al., 2014).

Hypotheses

We hypothesized that critical consciousness climate would be positively related to all intergroup, academic, and socioemotional outcomes, but we refrained from specifying concrete hypotheses for relationships with experienced discrimination. We also hypothesized that a critical consciousness climate would show larger relationships with positive intergroup attitudes for majority group members and larger relationships with academic and socioemotional outcomes for minority group members.

Effects of Polyculturalism Climate

As a polyculturalism climate fosters learning about the historical and continued connections between different cultural groups, it has the potential to improve intergroup outcomes across groups (Rosenthal et al., 2015; Rosenthal & Levy, 2010, 2012; Schachner et al., 2021). The small amount of research that has been conducted with school students has pointed to the benefits of a polyculturalism climate, as indicated by, for example, links to positive outgroup attitudes but also to academic outcomes, such as motivation and engagement (Juang et al., 2020; Schachner et al., 2021). Due to polyculturalism climate's emphasis on different cultural groups' interconnectedness, which allows individuals to feel more connected to each other while still acknowledging their individual cultural identities (Rosenthal & Levy, 2010), a polyculturalism

climate at school also holds promise for promoting positive socioemotional outcomes for both minority and majority students.

Hypotheses

We hypothesized that a polyculturalism climate in schools would be positively related to all outcomes.

Potential Moderators

As the strengths of relationships between cultural diversity climate approaches and outcomes likely depend on third variables, we considered a range of potentially relevant moderators in this meta-analysis.

Different Forms of Cultural Diversity Climate Approaches

Three cultural diversity climate approaches (intergroup contact theory's optimal contact conditions, multiculturalism climate, colorblind climate) comprise *different forms* that may be differentially related to the outcomes. Although Pettigrew and Tropp (2006) argued that intergroup contact theory's optimal contact conditions "are best conceptualized as an interrelated bundle rather than as independent factors" (p. 751), they also found some indications that authority support could be a contact condition that is especially relevant for reducing prejudice. Focusing on school settings and including more recent studies, it thus remains an interesting avenue to explore whether relationships between distinct contact conditions and multiple outcomes differ (see also Paluck et al., 2019, for a call for a systematic investigation of Allport's scope conditions).

Differential effects for different forms of cultural diversity climate approaches are most obvious for colorblind climate, with the assimilation and ignoring differences forms faring worst and the similarities form potentially being less harmful and even yielding (small) positive effects (e.g., Celeste et al., 2019; Schachner et al., 2021). The uniqueness form might also hold some benefits (see, e.g., in Rosenthal & Levy, 2010). Still, studies in schools have rarely addressed this form.

This meta-analysis is furthermore the first to test whether a multiculturalism climate that focuses on learning about and valuing different cultures (important differences form) yields different effects than a multiculturalism climate that focuses primarily on being affirmed in and learning about one's own culture (being affirmed in one's own culture form) or a multiculturalism climate that combines the two forms. The current state of research does not suggest that one form of multiculturalism is superior to the other, and the respective moderator analyses are therefore designed to contribute to current knowledge rather than to support or refute a specific a priori hypothesis.

Hypotheses

We hypothesized that positive effects would emerge for all the optimal contact conditions. Still, we deemed it possible that, at least for intergroup attitudes, relatively larger effects would surface for authority support than for other individual contact conditions, but the effect sizes for authority support and from studies that measured more than one contact condition were not expected to differ (see Pettigrew & Tropp, 2006). We additionally hypothesized differences for colorblind climate, with the assimilation and ignoring differences forms as maladaptive forms and the similarities form as the relatively most beneficial form. Without formulating a specific hypothesis, we tested whether the important differences form of a multiculturalism climate would yield different effects than the being affirmed in one's own culture form or than a multiculturalism climate in which the two forms were combined.

Percentage of Majority Group Members in a Sample

Asymmetrical effects for majority versus minority group students could potentially emerge for some cultural-diversity-climate–outcome-variable combinations, and we have discussed potential differences and hypotheses in depth in the sections on effects of diversity climate approaches. To provide a first test of these predictions, we considered the *percentage of majority group members in a study's sample* as a moderator (see also, e.g., Leslie et al., 2020). To provide additional information about differences between majority and minority group members, we also compared correlations obtained from minority students with those obtained from majority students.

Age and Educational Level

In the current meta-analysis, we relied on both *age* and *educational level* (elementary vs. secondary education) as moderators that capture related yet distinct information. As children grow older, their principal ecological niche changes from a strong focus on parents to include peers and teachers, among others. As a result, the significance of schools as sites for cultural socialization and intergroup interactions may increase during adolescence (Aldana & Byrd, 2015; Schachner, 2019). From a developmental perspective, younger children are just in the process of developing an understanding of group memberships and differences. Later, during adolescence, they become increasingly aware of subtle aspects related to culture, race, and ethnicity (Quintana, 1998; Verkuyten & Thijs, 2013). The transition to secondary education typically coincides with (early) adolescence. Still, the duration of primary and secondary education can still vary across some countries (e.g., 6 vs. 4 years of elementary school) or even across federal states within one country (e.g., in Germany).

Hypotheses

On the basis of theory and prior research, we expected cultural diversity climate to become more important with increases in students' age, and relatedly, we expected it to matter more in secondary school than in elementary school. Thus, we hypothesized larger relationships between cultural diversity climate and the outcomes for older students.

World Region

Educational systems, (educational) policies, as well as the implementation of cultural diversity climate approaches in schools and respective research traditions differ around the world (e.g., Berry & Sam, 2013). For instance, it has been argued that a multiculturalism climate at school may be less articulated in Europe

than in the United States (e.g., Verkuyten & Thijs, 2013). Similarly, research on intergroup contact theory's optimal contact conditions stems from the United States (Allport, 1954), and optimal contact conditions may therefore be more effectively implemented in U.S. schools, maximizing their potential impact. Hence, there are some indications that studies from the United States may yield larger effects than studies conducted in Europe, at least regarding some cultural diversity climate approaches. In the current meta-analysis, we tested this prediction by including the *world region* in which a study was conducted as another moderator.

Hypotheses

We cautiously hypothesized that studies from the United States would yield larger effects than studies from Europe.

Source of Information

A school's cultural diversity climate can be assessed from different perspectives (moderator: *source of information*). According to the large body of research on school or class climate and teaching quality without an explicit focus on culture (e.g., Aldrup et al., 2018), relationships between cultural diversity climate and outcomes are presumably larger in studies that used students' ratings of their school's cultural diversity climate than in studies that relied on teachers' ratings of the school's cultural diversity climate or scores from external observers. In fact, student ratings can be considered the most appropriate source of data from a phenomenological perspective, given that students' behavior might be more readily affected by their subjective interpretation of the classroom context than by any objective indicators or teachers' ratings (Lüdtke et al., 2009; Miller & Murdock, 2007).

Hypotheses

We hypothesized that studies using student ratings of cultural diversity climate would show larger links to the outcomes than studies using teacher ratings. (There were no suitable studies that relied on external observer ratings to include in the meta-analysis.)

Three additional moderators (percentage of female participants in a sample, level of analysis, publication year) are described below and were analyzed for exploratory purposes but without concrete hypotheses.

Percentage of Female Participants in a Sample

The meta-analysis additionally tested whether the *percentage of female participants* in the sample affected the sizes of the relationships between the cultural diversity approaches and outcomes. This analysis was conducted to account for gender as a key sociodemographic characteristic and to inform future research.

Level of Analysis

Correlation coefficients in research on the cultural diversity climate in schools can be distinguished on the basis of the *level of analysis*. There are studies on cultural diversity climate approaches at school that have relied on multilevel models. In multilevel models, correlations can be computed at a higher level (the school or class level), which represents correlations between students' ratings of their school's cultural diversity climate aggregated at the higher level (i.e., the mean of the ratings given by all the students in a school or class) and aggregated student outcomes. Correlations can also be located at the individual student level in multilevel models, where the ratings express individual students' perceptions of the cultural diversity climate in their school or class, and thus, these correlations describe the relationships between these perceptions and the outcomes of individual students (e.g., Lüdtke et al., 2009; Marsh et al., 2012; Zitzmann, Wagner, et al., 2022). Alternatively, many studies on cultural diversity climate rely on "regular" single-level bivariate correlations (i.e., correlations that are based on individual students' ratings that do not stem from multilevel models and that thereby do not account for the grouping of students in classes/schools). The existence of these differences led us to consider the level of analysis as an additional methodological moderator, whereby we distinguished between two categories: We subsumed individual-student-level correlations from multilevel models as well as single-level "regular" bivariate correlations under the first category (labeled individual student correlations), whereas the correlations obtained at the school or class level made up the second category (labeled higher level correlations). All previous explanations have focused on student-rated cultural diversity climate. Methodologically, teachers' ratings of cultural diversity climate (e.g., which practices they implement in a class or a school) must be located at the class or school level, as each student in a class/school who is taught by the same teacher has the same teacher-rated cultural diversity climate score. These teacher ratings (one score for each class/school) are then linked to student outcomes (aggregated at the school/class level; i.e., one score for a specific outcome for each school/class). Accordingly, correlations between teacher-rated cultural diversity climate and student outcomes were assigned to the second category, which referred to higher level correlations.

Publication Year

It has been shown that effects often tend to decline over time. This effect is known as the decline effect, and possible explanations include regression to the mean or publication bias (e.g., Schooler, 2011). Therefore, including *publication year* in the moderator analyses allowed us to test the decline effect.

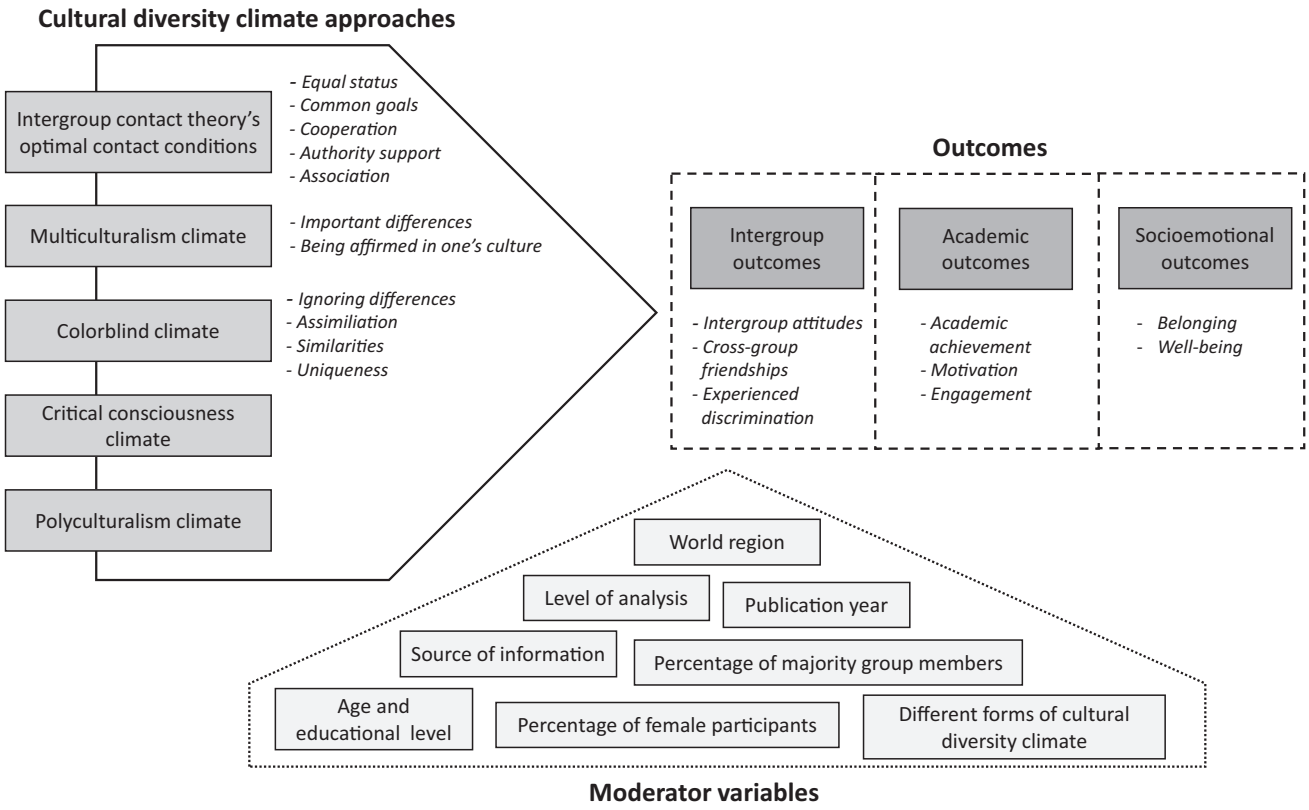
Figure 2 provides an overview of the five cultural diversity climate approaches and the outcomes and moderators we considered.

Goals of the Current Meta-Analysis

This first-of-its-kind meta-analysis provides a quantitative summary of the current state of research on relationships between five cultural diversity climate approaches in schools (intergroup contact theory's optimal contact conditions, multiculturalism climate, colorblind climate, critical consciousness climate, and polyculturalism climate) and three categories of outcome variables (intergroup, academic, and socioemotional outcomes). Whereas research on intergroup contact theory's optimal conditions and its applications to different settings has a long and rich tradition (e.g., Green et al., 1988; Tropp & Pettigrew, 2005b), recent years have also seen an upsurge in studies on other types of cultural diversity climate approaches in schools (e.g., critical consciousness climate, e.g., Bañales, Aldana, et al., 2021; Juang et al., 2020; Konings et al.,

Figure 2

Graphical Representation of the Five Cultural Diversity Climate Approaches, Three Outcome Categories, Eight Separate Outcomes, and Nine Moderator Variables Investigated in the Current Meta-Analysis



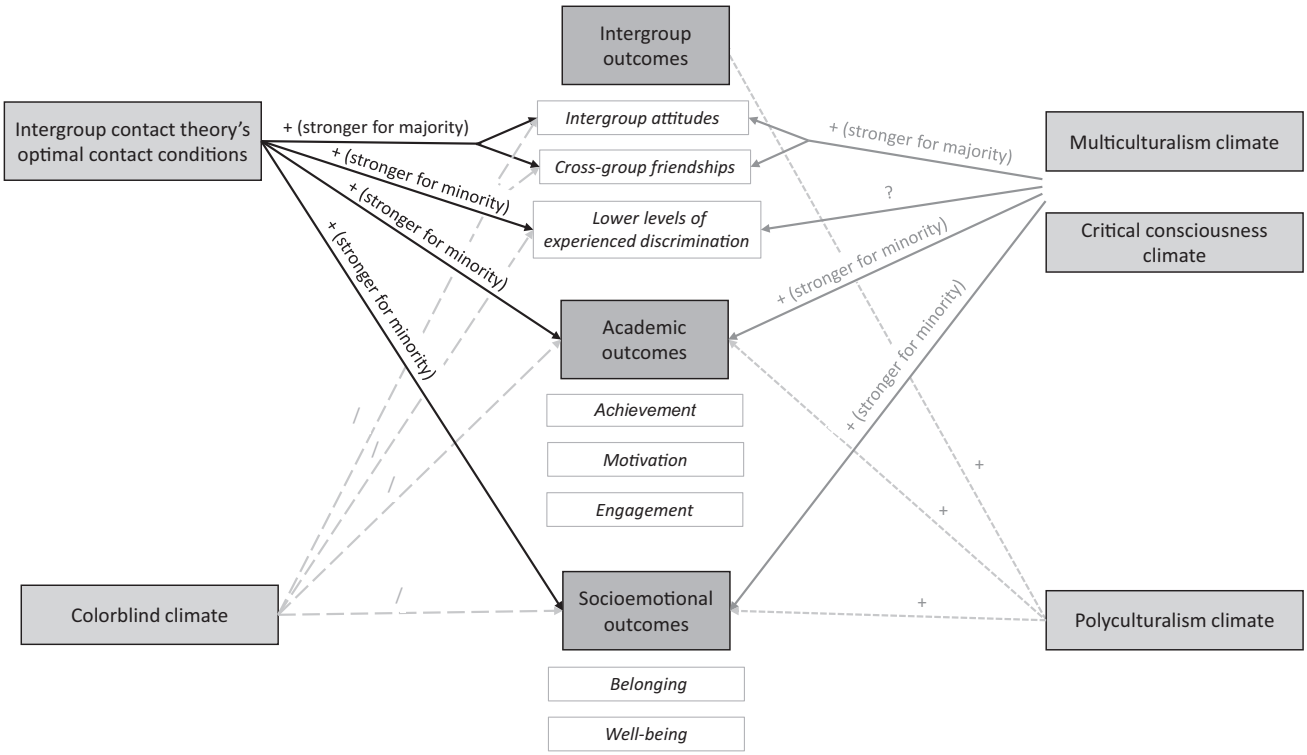
2021; Schwarzenthal et al., 2022). Nonetheless, to date, it has been impossible to draw conclusions about the actual practical significance of the associations between different cultural diversity climate approaches in schools and different outcomes, as no meta-analytic investigations have systematically synthesized these studies. Moreover, large inconsistencies in the conceptualization, measurement, and labeling of different cultural diversity climate approaches prevail. For instance, scholars have used different terms to describe the same construct; for example, items mapping the equal status dimension of the optimal contact conditions have been labeled multiculturalism in school (Baysu et al., 2021), racial fairness (Mattison & Aber, 2007), or teacher/staff racial climate (Byrd & Chavous, 2011). In other instances, researchers have used the same terms to describe conceptually distinct constructs; for example, terms such as multiculturalism or multicultural practices have been employed not only to refer to multiculturalism climate but also, for example, to refer to optimal contact conditions or critical consciousness climate (e.g., Chang & Le, 2010; Haenni Hoti et al., 2017; Hjerm et al., 2018). This phenomenon might not be surprising, as scholars come from different research traditions and use different theoretical frameworks (e.g., Banks, 2004; Gay, 2010; Zirkel, 2008). Nonetheless, this fragmentation likely prevents a more complete understanding of cultural diversity climate and hinders theoretical progress in the field. To unify different research areas, for our meta-analysis, we coded each study's cultural diversity climate measure on the basis of its alignment with one of the five cultural diversity climate approaches from the psychological literature, as the approaches are comprehensive yet sufficiently fine-grained for drawing differentiated conclusions.

To summarize, in this meta-analysis, we addressed the following set of questions (see the theoretical background sections for detailed corresponding hypotheses). For ease of interpretation, all correlation coefficients were coded so that higher values reflected more positive manifestations (e.g., more positive intergroup attitudes, less experienced discrimination, higher achievement). Globally, what are the overall strengths of the associations between cultural diversity climate approaches and intergroup, academic, and socioemotional outcomes (see Figure 3 and Supplemental Table S1)? Do the strengths of the associations depend on the percentage of majority group members in the sample? Which forms of cultural diversity climate approaches (for contact conditions, multiculturalism climate, and colorblind climate) demonstrate the largest associations with the outcomes? In addition, we tested whether the sizes of the associations varied by age and educational level, source of information, world region in which the study was conducted, the percentage of female participants in the sample, level of analysis, and publication year.

Furthermore, we expected that, out of all the cultural diversity climate approaches, the largest relationships across outcomes would be observed for intergroup contact theory's optimal contact conditions, as practices derived from intergroup contact theory are easier to implement than other approaches, thus facilitating a more widespread adoption (e.g., Civitillo et al., 2017). By contrast, for

Figure 3

Hypotheses Regarding Relationships Between Cultural Diversity Climate Approaches and Outcomes



Note. Overview of the hypotheses regarding relationships between cultural diversity climate approaches and the outcomes examined in this meta-analysis, including assumptions about differences in the strengths of effects for majority and minority group members. + indicates a positive relationship and / indicates that no (significant) relationship was assumed. We had the same hypotheses for multiculturalism climate and critical consciousness climate; therefore, they are combined in the figure. As the hypotheses about relationships with different outcomes subsumed under the categories of academic outcomes (i.e., achievement, motivation, engagement) and socioemotional outcomes (belonging, well-being) did not differ for any of the cultural diversity climate approaches, the arrows point only to the overall categories of academic and socioemotional outcomes for parsimony. Due to the smaller number of studies and effect sizes available for the critical consciousness and polyculturalism climates, we were able to investigate relationships with the three categories of intergroup, academic, and socioemotional outcomes but not with the eight outcomes subsumed under these categories.

example, more background knowledge and experience (e.g., about the histories of different cultural groups or about the extent and roots of existing social inequities) may be required to establish a multiculturalism climate, a polyculturalism climate, or a critical consciousness climate, and these approaches may be implemented in a more superficial manner (see, e.g., Agirdag et al., 2016).

Method

Search Procedure and Sample

We conducted a systematic literature search in the months from December 2021 until March 2022 (last update: March 15, 2022) in the three databases APA PsycInfo, Web of Science,[4] and ProQUEST Dissertations. The search combined search terms referring to the school setting (student* or teacher* or school*) with search terms relating to cultural diversity climate ("multicultural climate" OR "cultural diversity climate" OR "diversity climate" OR "intercultural climate" OR "racial climate" OR "interracial climate" OR "ethnic climate" OR "cultural pluralism climate" OR "multicultural education" OR "diversity education" OR "intercultural education" OR "multicultural teaching" OR "diversity teaching" OR "intercultural teaching" OR "culturally responsive teach*" OR "culturally relevant teach*" OR "colorblind*" OR "colourblind*" OR "color-evas*" OR "colour-evas*" OR "critical consciousness" OR "cultural diversity norm*" OR "cultural pluralism" OR "intergroup contact" OR "school racial socialization*" OR "school diversity approach*" OR "school equity" OR "equitable school climate" OR "school multiculturalism" OR "school cultural socialization*" OR "racial fairness" OR "multicult* attitude*" OR "diversity attitude*" OR "intercult* attitude*" OR "multicult* belief*" OR "diversity belief*" OR "intercult* belief*"). To instruct the database to search for all possible forms of a search term, a truncation symbol (*) was added to its root. We restricted our search to articles published in English. In Web of Science, we further excluded review articles and book reviews from our search. As APA PsycInfo allows users to restrict the search to specific age groups, we included only articles focusing on "childhood," "adolescence," or "school age." For ProQuest, we further restricted our

[4] For the Web of Science search, the following databases were accessed: The Web of Science Core Collection Arts and Humanities Citation Index, Science Citation Index Expanded, Social Sciences Citation Index.

search to Abstracts, given that a search in full texts yielded a large number of irrelevant hits.

The database search resulted in 7,132 hits (5,334 from Web of Science, 1,149 from APA PsycInfo, and 649 from ProQuest), of which 6,668 remained after duplicates were removed. The studies were screened on the basis of the following inclusion criteria. First, the studies had to focus on a cultural diversity school or class climate aligned with intergroup contact theory's optimal contact conditions, multiculturalism climate, colorblind climate, critical consciousness climate, or polyculturalism climate. Second, the studies had to assess such cultural diversity climate constructs using ratings by students, teachers, other school staff, or external raters (e.g., classroom observations). Therefore, we did not consider (the very few) studies that relied on document analyses of country or school cultural diversity policies or studies focusing on the presence of artifacts in schools as indicators of cultural diversity climate (e.g., toys or music instruments from different countries and cultural contexts in the school). Third, the studies had to be conducted in K-12 school settings. Therefore, research relying on samples of university students or research conducted in preschool/kindergarten settings was not considered. Fourth, the studies had to include outcome variables that were of interest in the current meta-analysis. Fifth, only empirical quantitative studies were included, meaning that qualitative studies, case studies, and review articles were not considered. Sixth, if the diversity climate measure included other content in addition to the diversity climate approaches that we focused on, we kept the study as long as at least half of the items referred to cultural diversity climate (there was only one study that actually included a substantial number [but still less than 50%] of items that did not refer to cultural diversity; therefore, we did not run moderator analyses that used scale characteristics as a moderator). Seventh, only studies reporting bivariate correlation coefficients were considered. If the correlations were not provided in the article, the first author contacted the authors of the article to ask for the respective information (43 requests, 58% success rate). Eighth, we included only studies written in English.

The studies from the databases were independently screened by either the first or the third author and a trained research assistant who screened all the studies, meaning that each study was screened by two independent coders. Their agreement was excellent (almost 100% rater agreement). All discrepancies were resolved by discussion until consensus was reached. In total, 69 studies were included from the databases. The search was then expanded by screening the references of the included studies to see if potentially relevant studies were cited, performing citation tracking of the included studies, and checking the references from reviews and overview articles on related topic (e.g., Okoye-Johnson, 2011; Schachner, 2019; Verkuyten & Thijs, 2013). In addition, we posted a call on a mailing list (cogdevsoc, the mailing list of the cognitive development society) to ask for studies and specifically for unpublished ("gray") literature. Furthermore, two studies were suggested by authors of studies that were included from the database search with whom the first author was in contact to clarify the details on their study (see the Coding section for details). The expanded search yielded 10 additional studies. Therefore, the final number of included articles was 79, yielding 61 independent samples with 640 effect sizes and a total sample size of 56,552 students. Figure 4 presents the study selection diagram. Information on all the studies and samples that were included can be found in Supplemental Table S2.

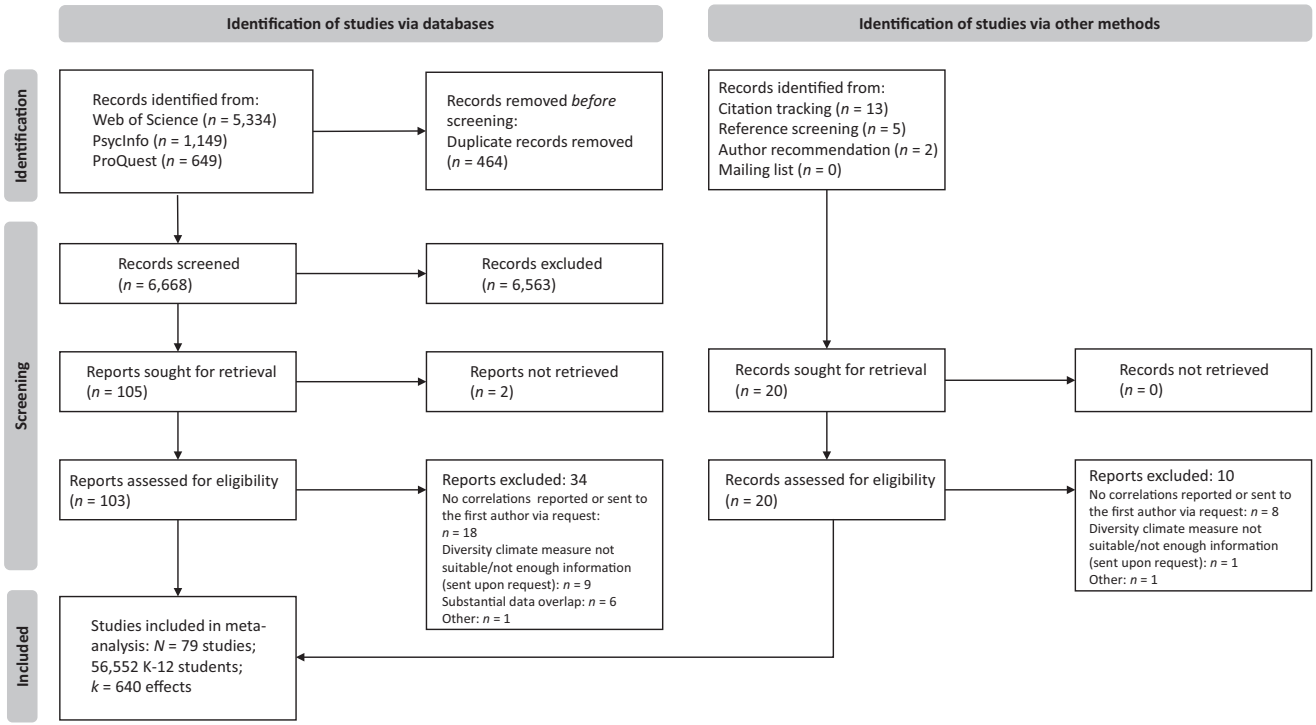
Coding

The first and fourth authors independently coded all the correlation coefficients between the five cultural diversity climate approaches and the outcome variables. Interrater agreement was excellent (97% rater agreement across all correlation coefficients, ranging from 92% [for critical consciousness climate] to 100% [for polyculturalism climate] for the separate cultural diversity climate approaches). The authors compared their coding and discussed any disagreements until consensus was reached.

In line with the analytical strategy (see the Analyses section for more details), the goal for the coding was to extract as much information from every single study as possible. For example, if a study had correlations at the individual student level as well as on the classroom level, we coded for both types of correlations. Similarly, if a study reported correlations based on both student-reported and teacher-reported cultural diversity climate approaches, we coded for both types of correlations. For a longitudinal study with multiple measurement points, the cross-sectional correlations for each measurement point were coded when they were available. If a study reported separate correlations for majority and minority group members, we coded for these separate correlations. In addition, we retained studies with overlapping samples but assigned them the same sample code to be able to account for these data dependencies in the analyses. If two studies used the same sample and reported correlations between the same cultural diversity climate measure and exactly the same outcome, we coded only one of the two correlation coefficients. The first author was in contact with many of the authors of the studies included in the meta-analysis (e.g., to clarify questions about the cultural diversity climate measures [see next section] or to ask for correlations if no correlation coefficients were reported in the article). Several times, in these communications, the authors of the manuscripts told the first author of this meta-analysis about correlations with additional outcomes that had not been reported in their manuscripts (see Supplemental Table S2 for more information, and see the Transparency and Openness section for the link at https://osf.io/m3gkc/ to all the coding files). These correlations were also included in the meta-analysis so that we could synthesize as many effect sizes as possible.

Labels used to describe cultural diversity climate were often insufficient for our coding, for example, because authors used a variety of labels for similar constructs or because they had a different understanding of labels and thus labeled their diversity approach in a way that was inconsistent with the definitions we followed. Therefore, our coding of the diversity climate measures was based on their content rather than on how the authors labeled them. Still, some studies did not report all the items they used to assess cultural diversity climate, some did not rely on established measures for which the items were known and could be accessed, and some adapted existing measures for the purpose of their study, including the development of new items. In such cases, the first author of this meta-analysis contacted the authors of the study and asked for the items (26 authors contacted, 85% success rate). There were also studies in which more than one cultural diversity climate approach was assessed on one scale. If a clear majority (i.e., two thirds of the items) focused on one specific approach, it was coded as such, but this issue concerned only a handful of studies. The same "two-thirds rule" was applied for different forms of intergroup contact theory's optimal contact conditions and multiculturalism climate (e.g., if

Figure 4
Flowchart of the Search Process and Study Selection



Note. Each study that was excluded (34 from the database search and 10 from the extended search) was assigned to only one category that detailed the reason for exclusion even though some of them could have been assigned to two (e.g., ambiguities regarding the climate measure and no correlations reported/sent).

three out of four items on a scale referred to "equal status" and one item to another contact condition, it was coded as "equal status"). Nevertheless, there were also cases in which cultural diversity climate approaches were mixed within a scale without a clear majority pertaining to one approach. In these instances, the first author contacted the authors of the study and asked for separate correlations for each cultural diversity climate approach (nine authors contacted, 89% success rate). If the authors did not respond to this request or could not provide the information for other reasons (e.g., data no longer available), the originally reported correlations that were based on a mix of different cultural diversity climate approaches were not coded. We further note that effects for different cultural diversity climate approaches could come from the same study and, thus, the same schools that were investigated in a specific study.

Below, we describe the operationalizations employed for the outcomes and the moderators and present more information about the coding. Supplemental Materials S1 provides examples of how we coded the variables to make the coding process more concrete. We had five separate coding files for the five approaches, which can be found on the Open Science Framework (see the Transparency and Openness section).

Outcomes

We operationalized intergroup outcomes as follows: Different types of intergroup attitudes have been described in the literature, with authors referring to, for example, prejudice, stereotypes, outgroup evaluations, anti-immigrant attitudes and feelings, and ingroup bias (i.e., more positive evaluations of the ingroup than the outgroup, obtained, e.g., by subtracting the former from the latter). To retain as many studies as possible, we considered all different types of intergroup attitudes as long as there was a reference to an "outgroup." Thereby, the following a priori defined coding rules were applied: If a study included multiple intergroup attitude variables, preference was given to prejudice, and in the rare cases in which multiple prejudice measures were included in one study, we coded the one that referred to attitudes toward an outgroup and not the one that referred to evaluations of one's feelings about an outgroup. If a study included several intergroup attitude measures that differed in terms of their specificity, we coded the more specific one: For example, in a study focusing on German and Turkish children, we coded correlations for the measure that referred to the respective outgroup (i.e., for German children, the outgroup consisted of Turkish children, and vice versa) and not correlations for a measure that referred more broadly to children from a "country other than my own" as the outgroup. In addition, if a study included both a "regular" outgroup evaluation measure and a measure of ingroup bias, we coded the correlation with the first one. We further focused on intergroup relations in terms of (a) cross-group friendships (e.g., based on peer nomination measures or self-reported number of cross-group friends) and (b) experiences of discrimination. If a study on discrimination included multiple discrimination measures, preference was given to measures that referred to the self (i.e., one's own experiences with discrimination)

as opposed to perceptions of discrimination against one's entire cultural, racial, or ethnic group. We also gave preference to measures that referred to discrimination on the basis of one's cultural, ethnic, or racial background as opposed to measures that referred to discrimination or victimization more generally.

Academic outcomes were operationalized as follows: We focused on (a) academic achievement operationalized as school grades and achievement test scores; (b) academic motivation operationalized as, for example, school or learning motivation, academic interest/intrinsic motivation, value beliefs, or academic self-efficacy; and (c) school engagement operationalized as behavioral (e.g., paying attention in class), cognitive (e.g., looking over one's schoolwork and making sure it is done well), or affective engagement (e.g., enjoying schoolwork; see, e.g., in Del Toro & Wang, 2021a), with studies typically relying on a composite engagement measure. If studies included more than one achievement measure, we coded the correlation for standardized achievement test scores. If there were multiple motivational constructs reported in one study, we coded the ones that referred to intrinsic motivation/interest.

We considered two types of socioemotional outcomes, namely, belonging/positive relationships and well-being. We operationalized belonging and positive relationships as a sense of belonging at school, loneliness (reverse-coded), positive student–student relationships, positive student–teacher relationships, and perceptions of a positive social and socioemotional school and class climate. If there were multiple belonging/social relationship measures included in a given study, preference was given to sense of belonging. If a study assessed both student–student relationships and student–teacher relationships, we coded the first. Well-being was operationalized as, for example, well-being, self-worth, self-esteem, or life satisfaction. If a study included multiple well-being measures, we coded those that referred to self-esteem.

Moderators

The first and fourth authors independently coded all moderators (97% rater agreement across all moderators; ranging from 96% [for critical consciousness climate] to 100% [for polyculturalism climate] for the separate cultural diversity climate approaches). Subsequently, the coding was compared, and the authors discussed any disagreements until consensus was reached.

For three cultural diversity climate approaches (contact conditions, multiculturalism climate, colorblind climate), we considered their different forms in moderator analyses to compare the strengths of the correlations with the outcomes for the different forms. For intergroup contact theory's optimal contact conditions (see, e.g., Pettigrew, 1998; Tropp et al., 2022; Tropp & Pettigrew, 2005a), we considered equal status, common goals, cooperation, support from authorities, and association as their forms. For example, in a study that assessed equal status and cooperation separately and thus also reported two separate correlation coefficients for the association between an outcome and equal status and the association between an outcome and cooperation, the respective correlations were coded as "equal status" and "cooperation," respectively. Many studies focused on only one optimal contact condition (often equal status, which was sometimes combined with related aspects, e.g., respect and fairness, e.g., Thijs & Verkuyten, 2013). Some studies included multiple contact conditions, either separately (e.g., Byrd, 2017) or combined into one scale (e.g., Jugert et al., 2011; Schachner et al., 2016). Whenever multiple conditions were assessed in one scale and correlations between this scale and the outcomes were reported, we assigned the label "overall/mixed contact conditions" instead of referring to a distinct contact condition. Accordingly, this "mixed/overall" category could also be taken into account in the moderator analyses that compared the different contact conditions. For multiculturalism climate in schools, we coded the important differences form and the being affirmed in one's own culture form. A relatively large number of studies combined the two forms into one scale (labeled "overall/mixed multiculturalism climate"). Again, we coded correlations for different multiculturalism forms when they were identified. The same procedure was applied to colorblind climate, with its forms ignoring differences, similarities, assimilation, and uniqueness.

We coded the percentage of majority group members in each sample, defined in relation to the demographic characteristic (moderator: percentage of majority group members). In some instances, separate correlations were reported for minority and majority group members. Here, we coded the two correlations separately, along with other information about each group (e.g., sample size) but assigned the same sample code to each correlation to account for the fact that these correlations stemmed from the same sample. This approach allowed us to consider them in the moderator analyses for percentage of majority group members in the sample. Separate correlations for minority and majority group members (either from the same study as just described or from studies that exclusively relied on samples of majority or minority students) also fed into the additional analyses in which we compared the strengths of the relationships between the cultural diversity climate approaches and the outcomes for majority versus minority group members.

For the moderator percentage of female participants, we coded the percentage of female participants in each study. Furthermore, the mean age of study participants for each study (moderator: age) and the level of education (elementary school vs. secondary school vs. mixed educational levels; moderator: education level) were coded. For the moderator world region, we extracted information on the region of the world in which the study had been conducted (three categories: United States, Europe, a world region other than these two).

We coded whether the cultural diversity climate measure was based on student ratings or teacher ratings (moderator: source of information). It should be mentioned, however, that teacher scales are not always parallel to student scales in the sense that teacher scales sometimes merge ratings of instructional practices relating to cultural diversity with teachers' respective personal beliefs. By including the source of information as a moderator, we were able to account for these differences; nonetheless, source of information is thus also to some extent confounded with potential differences in approaches for measuring cultural diversity climate in different target groups. For the moderator level of analysis, we distinguished between the two categories (a) "regular" single-level bivariate correlation or individual student-level correlation versus (b) higher level correlation (i.e., school or classroom/teacher level). The year of publication (e.g., the year a study was published or a dissertation was submitted) was coded as another moderator.

For additional exploratory moderator analyses on the number of cultural diversity climate approaches considered, we extracted information on the number of approaches coded for each study,

which could range from one to five. Furthermore, to determine whether optimal contact conditions played a particularly critical role, we coded the following information to use in another set of moderator analyses. For each study, we extracted information on whether relationships between the outcomes and (a) only optimal contact conditions, (b) optimal contact conditions plus at least one other diversity climate approach, and (c) only (one or more) approaches other than optimal contact conditions were coded and included in our meta-analysis.

Analyses

To measure the magnitude of the relationships between cultural diversity climate approaches and the outcome variables, we used correlation coefficients as a measure of effect size, with correlations above .10, .30, and .50 reflecting small, medium, and large effects, respectively (Cohen, 1992).

In many cases, several effect sizes were extracted from a single study. Thus, the effect sizes included in this meta-analysis have a nested structure and dependencies within studies because multiple effect sizes were computed from the same sample. Ignoring these dependencies can lead to an underestimation of standard errors and biased inferences (Borenstein et al., 2009; Van den Noortgate et al., 2013). Therefore, we applied three-level random-effects models with sampling nested in effect sizes nested in independent samples (Assink & Wibbelink, 2016; Konstantopoulos, 2011). Additionally, we used cluster robust variance estimation with bias-reduced linearization, as developed by Pustejovsky and Tipton (2018), to estimate confidence intervals and hypothesis testing. This method allows dependent effect sizes to be integrated within a meta-analysis without knowledge of the underlying covariance structure among effect sizes and is particularly well suited if only a small number of studies and effect sizes are available for the analyses.

Prior to all analyses, the correlation coefficients were Fisher *z*-transformed for the calculations; the resulting coefficients were subsequently back-transformed for ease of interpretation, following standard practice for correlation-(*r*)-based meta-analyses (Lipsey & Wilson, 2001). Effect sizes were weighted according to their inverse variance to account for study precision. We used random-effects models in all our calculations, as we did not assume that the included effects originated from an identical effect size distribution. For the overall effects, we provide *Q*-statistics and their associated *p* values as well as I^2 values for all three levels. To illustrate the heterogeneity of effect sizes, we report the prediction intervals of the weighted mean effects, which indicate the expected range of true effects in comparable future studies (IntHout et al., 2016).

We performed moderator analyses using mixed-effects models with cluster robust variance estimation. For categorical study characteristics, dummy-coded variables were created, and moderator analyses with additional cluster robust omnibus Wald tests of moderators were reported. This overall (omnibus) test of moderators is used to analyze whether the estimate of the first category differs significantly from all the other categories but does not test the differences between the other categories. So, for example, for a moderator with three categories, it is possible for the overall test to be nonsignificant because Categories 1 and 2 do not differ and Categories 1 and 3 do not differ even though there is a significant difference between Categories 2 and 3. Therefore, we additionally conducted pairwise comparisons between all categories using Wald tests. Numerical moderators were handled as continuous variables. Because not all the studies reported information on all the moderators they tested, we excluded the resulting missing values (listwise deletion) from the corresponding moderator analyses. We conducted separate analyses for the different cultural diversity climate approaches, and we also conducted separate moderator analyses (i.e., we did not include more than one moderator variable in an analysis).

Cluster robust variance estimation tends to be overly conservative for meta-analyses with small numbers of studies and multiple contrast hypotheses testing (Joshi et al., 2022). Therefore, following Joshi et al.'s (2022) recommendations, we relied on cluster wild bootstrapping with naïve *F* statistics using 2,000 replications for hypothesis testing in analyses with fewer than 10 studies or moderator analyses with many categories, leading to degrees of freedom below 1 in cluster robust variance-corrected *F* statistics.

To investigate potential publication bias, we used Egger's regression analysis (Egger et al., 1997) in combination with visual inspection of funnel plot asymmetry (Borenstein et al., 2009). For Egger's test, we addressed dependencies between effect sizes by using three-level models instead of simple meta-regressions. We estimated the overall and moderator effect sizes and confidence intervals by applying restricted maximum likelihood estimation in R, Version 4.2.0 (R Core Team, 2022) and the packages *metafor* (Version 3.4; Viechtbauer, 2010), *clubSandwich* (Version 0.5.7; Pustejovsky, 2022), and *wildmeta* (Version 0.3.0; Joshi et al., 2022).

Transparency and Openness

We adhered to the meta-analytic reporting standards guidelines for meta-analytic reporting (Appelbaum et al., 2018). All meta-analytic data, analysis code, and research materials (including our coding scheme) are available on the Open Science Framework (Bardach & Röhl, 2024, https://osf.io/m3gkc/). This review project was not preregistered.

Results

Study and Sample Characteristics

Background variables for sample and study characteristics were extracted and are summarized in Supplemental Table S2. Intergroup contact theory's contact conditions were the most extensively studied cultural diversity climate approach (46 studies, 328 effect sizes), followed by multiculturalism climate (27 studies, 169 effect sizes), colorblind climate, (10 studies, 70 effect sizes), critical consciousness climate (eight studies, 50 effect sizes), and polyculturalism climate (two studies, 23 effect sizes). Across studies, the sample compositions were both gender balanced (weighted percentage of female participants in the samples: 49.86%, ranging from 39% to 62%) and balanced in terms of majority and minority group members (weighted percentage of majority group members in the samples: 50.55%, ranging from 0% to 100%). The studies reported data from 11 countries. Roughly half of the samples each stemmed from Europe (49%, $n = 30$) and from the United States and Canada (47.5%, $n = 29$; but only one study was conducted in Canada and all others in the United States). Only a very small number of samples were drawn from other world regions (3.3%, $n = 2$; South America:

Chile; Asia: South Korea). The largest number of European samples came from the Netherlands (n = 16) and Germany (n = 13); other European countries were less investigated (e.g., Italy, Sweden, Austria). In 22.8% (n = 18) of the included samples, students attended primary school, and in 73.4% (n = 58), they attended secondary school. Two of these studies (2.5%) included samples from both educational levels, and one study did not report this information. The average age of the students was 13.75 (SD = 2.13). Most of our coded effect sizes were based on individual student ratings (n = 65, 82.3%), as compared with a smaller number of effect sizes based on higher level correlations (i.e., the class or school level from multilevel models, 5.1%, n = 4). In total, 12.8% (n = 10) of the studies reported both individual student and higher level correlations. Cultural diversity climate approaches were predominantly assessed using student reports (92.4%). Teacher reports were less represented (5.1%). There were two studies (2.6%) that used both sources of data. In total, 23 studies were published between 2000 and 2015, and 56 studies were published between 2016 and 2022. Supplemental Tables S3–S7 report the values of all descriptive statistics, moderators, and effect sizes separately for each cultural diversity climate approach.

In our main analyses, we estimated various meta-analytic correlations to assess the relationships between cultural diversity climate approaches and the outcomes. Below we report the results for the overall outcomes (effects averaged across all the outcomes), the three outcome categories (intergroup, academic, and socio-emotional), and the eight separate outcomes.

Relationships Between the Cultural Diversity Climate Approaches and Outcome Variables

In a first step, we estimated the heterogeneity and variances at different levels for each of the five cultural diversity climate approaches (see Table 2). All mean-weighted effect sizes showed significant heterogeneity as indicated by the Q test statistics. Concerning the level-specific variance, studies involving intergroup contact theory's optimal contact conditions, multiculturalism climate, and colorblind climate showed the largest amount of variance (I^2) at the level of effect sizes, followed by the level of independent samples, and then the sampling level. For studies on critical consciousness climate and polyculturalism climate, larger proportions of variance were found at the level of independent samples. No variance was found at the effect size level for these two cultural diversity climate approaches, most likely because only a small number of studies contributed effect sizes.

Relationships With Overall Outcomes

The overall weighted average correlations with 95% confidence intervals and the related Q and I^2 statistics for all five cultural diversity climate approaches are presented in Table 2. Figure 5 shows the forest plot of the correlations with overall outcomes (i.e., collapsed across all outcomes). All outcomes were coded so that higher values reflected more positive outcomes. The results revealed a significant small-to-medium-sized positive correlation of r = .214 (p < .001) between intergroup contact theory's optimal contact conditions and the overall outcomes and a significant small positive relationship between multiculturalism climate and the overall outcomes (r = .121, p < .001). Colorblind climate was not statistically significantly related to the outcomes (r = .059, p = .179). For critical consciousness climate, we obtained a significant positive correlation of r = .084 (p = .004), which is slightly below the threshold for a small effect size. Polyculturalism climate was significantly and positively related to the outcomes, with a small effect size of r = .154 (p = .016). As indicated by the nonoverlapping confidence intervals for the meta-analytic correlation coefficients (see Figure 4), studies based on intergroup contact theory's optimal contact conditions showed significantly higher weighted average correlations than the multiculturalism climate, colorblind climate, and critical consciousness climate studies.

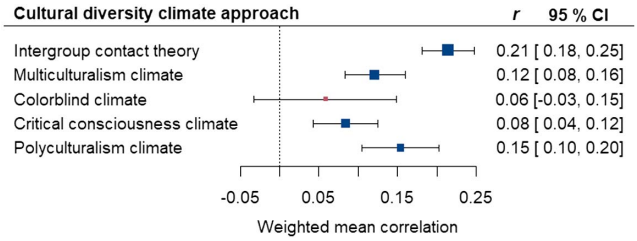
Table 2
Meta-Analytic Correlations Between Cultural Diversity Climate Approaches and Overall Outcomes

Study information and estimate	Intergroup contact theory	Multiculturalism climate	Colorblind climate	Critical consciousness climate	Polyculturalism climate
N	46	27	10	8	2
k	328	169	70	50	23
Overall r	.214***	.121***	.059	.084**	.154*
95% CI	[.181, .247]	[.083, .160]	[−.033, .149]	[.043, .125]	[.105, .203]
95% PI	[−.134, .515]	[−.194, .414]	[−.331, .431]	[−.263, .412]	[−.939, .967]
$Q_E(df)$	7735.7(32)***	3973.3(168)***	2796.0(69)***	988.2(49)***	486.0(22)***
σ^2 between	.007***	.004**	.011***	<.001	<.001
σ^2 within	.023***	.019***	.019***	.022***	.022***
I^2 independent samples	21.5	17.3	37.0	<0.01	<0.01
I^2 effect sizes	73.5	78.3	60.9	95.2	92.5
I^2 sampling	5.0	4.4	2.1	4.8	7.5

Note. Positive r values indicate positive effects (all correlation coefficients were coded so that higher values reflected more positive manifestations, e.g., more positive intergroup attitudes, less experienced discrimination, higher achievement). In the statistical literature on hierarchical models, it has been argued that variances close to zero can arise when the sample size is small because the likelihood is flat in this case and fails to peak at a more realistic value (Y. Chung et al., 2013). Therefore, a result of no variance (e.g., for I^2 independent samples for critical consciousness climate and polyculturalism climate) should be interpreted with some caution, particularly when the standard error is large, as it might be an underestimation of the true variance. N = number of studies; k = number of effect sizes; r = mean-weighted effect size; 95% CI = 95% confidence interval using cluster robust variance estimation; 95% PI = 95% prediction interval using cluster robust variance estimation; Q_E = test for heterogeneity; σ^2 = estimated variance between and within independent samples; I^2 = estimated percentage of variance between independent samples, effect sizes, and sampling error.
* p < .05. ** p < .01. *** p < .001.

Figure 5

Forest Plot of Mean-Weighted Correlations for the Different Cultural Diversity Climate Approaches With 95% Confidence Intervals



Note. Intergroup contact theory = intergroup contact theory's optimal contact conditions; *r* = mean-weighted effect size; CI = confidence interval. See the online article for the color version of this figure.

Relationships With Intergroup, Academic, and Socioemotional Outcomes

Next, we examined effects for the three outcome categories for all diversity climate approaches by conducting moderator analyses, with the different outcome categories as the moderators. As can be seen in Table 3, intergroup contact theory's optimal contact conditions were significantly related to intergroup outcomes (r = .226, p < .001; small-to-medium effect size), academic outcomes (r = .163, p < .001; small effect size), and socioemotional outcomes (r = .241, p < .001; small-to-medium effect size). The omnibus test, $F(2, 10.2) = 8.98$, p = .006, was significant, and pairwise comparisons revealed that the effect size for relationships with socioemotional outcomes was significantly larger than the effect size for relationships with academic outcomes, $F(1, 9.6) = 18.7$, p = .002. The other pairwise comparisons were not statistically significant.

Multiculturalism climate was not statistically significantly related to intergroup outcomes (r = .044, p = .348) but showed significant small positive correlations with academic (r = .127, p = .001) and socioemotional outcomes (r = .177, p < .001). The omnibus test was statistically significant, $F(2, 7.6) = 7.89$, p = .014, and pairwise comparisons showed that the effect for socioemotional outcomes was significantly higher than the effect for intergroup outcomes, $F(1, 9.04) = 7.75$, p = .021.

Colorblind climate was not statistically significantly related to any of the three outcomes (intergroup outcomes: r = −.041, p = .484; academic outcomes: r = .079, p = .167; socioemotional outcomes: r = .078, p = .056). The omnibus test was not statistically significant, $F(2, 3.2) = 2.49$, p = .223. Moreover, there were no

Table 3

Meta-Analytic Correlations Between Cultural Diversity Climate Approaches and the Outcomes Moderated by the Three Outcome Categories

Cultural diversity climate approach and outcome	*N*	*k*	*r*	*SE*	*t*	*df*	*p*	95% CI		95% PI	
								LL	*UL*	*LL*	*UL*
Intergroup contact theory's optimal contact conditions: $F(2, 10.2) = 8.98$, p = .006											
Intergroup	37	125	.226	.023	9.95	30.84	<.001	.181	.270	−.139	.533
Academic	20	104	.163	.022	7.47	17.36	<.001	.118	.208	−.134	.444
Socioemotional	26	99	.241	.028	8.85	22.27	<.001	.186	.294	−.139	.571
Multiculturalism climate: $F(2, 7.6) = 7.89$, p = .014											
Intergroup	15	38	.044	.045	0.97	13.22	.348	−.054	.141	−.301	.380
Academic	20	77	.127	.032	3.99	16.85	.001	.060	.192	−.176	.394
Socioemotional	19	54	.177	.029	6.30	14.14	<.001	.118	.236	−.168	.483
Colorblind climate: $F(2, 3.2) = 2.49$, p = .223											
Intergroup	6	14	−.041	.055	−0.75	5.51	.484	−.176	.095	−.497	.457
Academic	9	37	.079	.052	1.52	8.29	.167	−.041	.197	−.328	.483
Socioemotional	9	19	.078	.035	2.24	7.88	.056	−.003	.157	−.297	.435
Critical consciousness climate: $F_{naive} = 10.5$, p_{cwb} = .014											
Intergroup	7	17	−.011	.042	−0.25	5.19	.811	−.116	.095	−.375	.346
Academic	6	21	.150	.025	6.14	2.87	.010	.071	.228	−.250	.508
Socioemotional	7	12	.103	.035	3.00	4.72	.032	.013	.192	−.260	.441
Polyculturalism climate: $Q_{mod}(2)^a = 15.2$, p < .001											
Intergroup	2	5	−.037	.057	−0.65[a]		.515	−.149	.075	−.282	.212
Academic	2	13	.221	.350	6.40[a]		<.001	.154	.285	−.030	.445
Socioemotional	2	5	.165	.057	2.89[a]		.004	.053	.271	.021	.315

Note. Positive *r* values indicate positive effects (all correlation coefficients were coded so that higher values reflected more positive manifestations). *N* = number of studies; *k* = number of effect sizes; *r* = mean-weighted effect size; *SE* = standard error of the effect size; *t*, *df*, *p* = test of significance of estimates using cluster robust variance estimation; 95% CI = 95% confidence interval; 95% PI = 95% prediction interval; *LL* = lower limit; *UL* = upper limit; $F(df1, df2)$, p = test of moderators using cluster robust variance estimation; F_{naive}, p_{cwb} = test of moderators for small samples using cluster wild bootstrapping; $Q_{mod}(df)$ = test of moderator using the heterogeneity coefficient *Q*.

[a] As there were only two studies for polyculturalism climate available, no cluster robust variance estimation was possible, and instead, *Q* and *z* statistics are reported.

statistically significant differences in effect sizes for the three outcome categories for colorblind climate.

For critical consciousness climate, a nonsignificant relationship with intergroup outcomes ($r = -.011$, $p = .811$) and statistically significant small positive relationships with academic ($r = .150$, $p = .010$) and socioemotional outcomes ($r = .103$, $p = .032$) were found. The omnibus test was statistically significant, $F_{naive} = 10.5$, $p_{cwb} = .014$. The size of the effect for the relationship with intergroup outcomes was significantly smaller than the relationship with academic outcomes ($p_{cwb} = .044$; statistical significance for pairwise comparisons was based on cluster wild bootstrapping with naïve F statistics due to the small number of studies).

For polyculturalism climate, the results revealed a nonsignificant relationship with intergroup outcomes ($r = -.037$, $p = .515$) along with a significant small-to-medium-sized relationship with academic outcomes ($r = .224$, $p < .001$) and a significant small relationship with socioemotional outcomes ($r = .165$, $p = .004$). The omnibus test was statistically significant, test of moderator using the heterogeneity coefficient Q, Q_{mod} (2) = 15.2, $p < .001$.

Relationships With Separate Intergroup Outcomes: Intergroup Attitudes, Cross-Group Friendships, Experienced Discrimination

Correlations between cultural diversity climate approaches and the separate intergroup outcomes (i.e., intergroup attitudes, cross-group friendships, experienced discrimination) were examined with moderator analyses (see Table 4). Due to the limited number of effect sizes for critical consciousness climate and polyculturalism climate, we did not investigate associations with any of the eight separate outcomes.

Intergroup contact theory's optimal contact conditions were significantly and positively related to more positive intergroup attitudes ($r = .255$, $p < .001$; small-to-medium effect size), a larger number of cross-group friendships ($r = .129$, $p = .027$; small effect size), and lower levels of experienced discrimination ($r = .210$, $p = .001$; small-to-medium effect size). The results showed a significant small positive relationship between multiculturalism climate and intergroup attitudes ($r = .159$, $p = .010$), whereas the relationships with cross-group friendships and experienced discrimination were

Table 4

Meta-Analytic Correlations Between Optimal Contact Conditions, Multiculturalism Climate, and Colorblind Climate and the Outcomes Moderated by the Eight Outcome Types

Cultural diversity climate approach and outcome	*N*	*k*	*r*	*SE*	*t*	*df*	*p*	95% CI		95% PI	
								LL	*UL*	*LL*	*UL*
Intergroup contact theory's optimal contact conditions: $F(7, 3.20) = 3.69$, $p = .145$											
Intergroup attitudes	26	64	.255	.019	13.86	20.21	<.001	.218	.291	.039	.424
Friendships	5	18	.129	.036	3.65	3.51	.027	.026	.230	−.165	.405
Discrimination	17	43	.210	.054	3.98	14.77	.001	.098	.316	−.307	.655
Achievement	16	36	.132	.032	4.11	13.25	.001	.063	.200	−.141	.438
Motivation	12	39	.172	.043	4.01	9.81	.003	.077	.264	−.118	.474
Engagement	11	29	.156	.031	5.15	6.59	.002	.084	.227	−.227	.517
Belonging	31	69	.263	.031	8.84	20.68	<.001	.203	.321	−.124	.591
Well-being	13	30	.177	.047	3.78	6.78	.007	.066	.283	−.210	.508
Multiculturalism climate: $F(7, 1.86) = 2.22$, $p = .358$											
Intergroup attitudes	9	15	.159	.047	3.41	7.39	.010	.050	.264	−.106	.412
Friendships	3	4	.027	.051	0.53	2.06	.646	−.185	.237	−.387	.454
Discrimination	9	19	−.046	.052	−0.89	9.18	.395	−.162	.071	−.364	.308
Achievement	12	25	.069	.020	3.38	12.75	.005	.025	.112	−.113	.241
Motivation	13	31	.183	.043	4.34	10.52	.001	.090	.272	−.224	.519
Engagement	7	21	.083	.057	1.47	4.38	.209	−.068	.231	−.237	.423
Belonging	15	31	.220	.038	5.95	10.40	<.001	.139	.297	−.074	.518
Well-being	10	23	.116	.052	2.25	6.32	.063	−.009	.237	−.195	.326
Colorblind climate: $F_{naive} = 692.8$, $p_{cwb} = .182$											
Intergroup attitudes	3	5	−.012	.098	−0.12	2.42	.916	−.356	.336	−.575	.526
Friendships	1	2	−.019	.041	−0.46	6.45	.661	−.116	.079	[a]	[a]
Discrimination	4	7	−.073	.047	−1.53	3.74	.205	−.205	.062	−.244	.243
Achievement	7	13	.057	.057	1.00	6.72	.352	−.079	.190	−.317	.447
Motivation	8	16	.096	.056	1.73	7.45	.124	−.034	.223	−.267	.470
Engagement	4	8	.061	.042	1.46	4.08	.216	−.054	.174	−.215	.458
Belonging	6	8	.097	.040	2.43	5.72	.053	−.002	.195	−.334	.461
Well-being	4	11	.060	.045	1.33	4.59	.246	−.059	.177	−.173	.327

Note. Critical consciousness climate and polyculturalism climate are not included due to the small numbers of identified studies and effect sizes for single outcome types. Positive r values indicate positive effects (all correlation coefficients were coded so that higher values reflected more positive manifestations). N = number of studies; k = number of effect sizes; r = mean-weighted effect size; SE = standard error of the effect size; t, df, p = test of significance of estimates using cluster robust variance estimation; 95% CI = 95% confidence interval; 95% PI = 95% prediction interval; LL = lower limit; UL = upper limit; $F(df1, df2)$, p = test of moderators using cluster robust variance estimation; F_{naive}, p_{cwb} = test of moderators for small samples using cluster wild bootstrapping.

[a] Due to the small number of studies, it is not possible to calculate meaningful prediction intervals.

not statistically significant (cross-group friendships: $r = .027$, $p = .646$; experienced discrimination: $r = -.046$, $p = .395$). No significant associations between colorblind climate and intergroup attitudes ($r = -.012$, $p = .916$), cross-group friendships ($r = -.019$, $p = .661$), or experienced discrimination ($r = -.073$, $p = .205$) were documented.

Relationships With Separate Academic Outcomes: Achievement, Motivation, Engagement

Intergroup contact theory's optimal contact conditions were significantly related to academic achievement ($r = .132$, $p = .001$), motivation ($r = .172$, $p = .003$), and engagement ($r = .156$, $p = .002$), with small effect sizes for all three relationships (see Table 4). For multiculturalism climate, the results showed significant positive correlations with academic achievement ($r = .069$, $p = .005$; slightly below the cutoff for a small effect size) and motivation ($r = .183$, $p = .001$; small effect size). The relationship between multiculturalism climate and engagement was not statistically significant ($r = .083$, $p = .209$, see Table 4 for all effects). None of the relationships between colorblind climate and the three academic outcomes were statistically significant (for academic achievement: $r = .057$, $p = .352$; for motivation: $r = .096$, $p = .124$; for engagement: $r = .061$, $p = .216$, see Table 4).

Relationships With Separate Socioemotional Outcomes: Belonging and Well-Being

As shown in Table 4, intergroup contact theory's optimal contact conditions exhibited significant positive associations with both belonging ($r = .263$, $p < .001$; almost a medium-sized effect) and well-being ($r = .177$, $p = .007$; small effect size). Multiculturalism climate was significantly and positively correlated with belonging ($r = .220$, $p < .001$; small-to-medium effect size) but not with well-being ($r = .116$, $p = .063$). There were no statistically significant relationships between colorblind climate and belonging ($r = .097$, $p = .053$) or well-being ($r = .060$, $p = .246$).

To foster a more comprehensive understanding, we compared the strengths of the effects across the eight outcomes for each cultural diversity climate approach using pairwise comparisons, which revealed the following additional findings: For optimal contact conditions, significantly larger relationships emerged for intergroup attitudes than for cross-group friendships, $F(1, 3.69) = 17.5$, $p = .016$, achievement, $F(1, 16.3) = 13.2$, $p = .002$, or engagement, $F(1, 7.67) = 8.49$, $p = .020$. Similarly, the effects for belonging were significantly larger than those for cross-group friendships, $F(1, 3.68) = 14.5$, $p = .022$, achievement, $F(1, 11.8) = 14.9$, $p = .002$, or engagement $F(1, 6.25) = 9.59$, $p = .020$. For multiculturalism climate, the effects for discrimination were significantly smaller than those for intergroup attitudes, $F(1, 8.37) = 15.2$, $p = .004$, motivation, $F(1, 7.7) = 7.81$, $p = .024$, belonging, $F(1, 8.19) = 13.1$, $p = .007$, or well-being, $F(1, 6.35) = 11.7$, $p = .013$. Moreover, the effects for motivation and belonging were significantly larger than the effects for achievement, $F(1, 9.47) = 10.5$, $p = .009$, and $F(1, 10.2) = 21.5$, $p < .001$, respectively; and the effect for belonging was significantly larger than the effect for engagement, $F(1, 4) = 12.2$, $p = .025$. For colorblind climate, the effects for motivation, engagement, and belonging were significantly larger than those for cross-group friendships, $F(1, 5.37) = 18.6$, $p = .007$; $F(1, 2.65) = 77.7$, $p = .005$; and $F(1, 4.14) = 34$, $p = .004$, respectively. They were also significantly larger than those for discrimination, $F(1, 3.05) = 11.6$, $p = .041$; $F(1, 2.42) = 14.1$, $p = .048$; and $F(1, 4.11) = 11.6$, $p = .026$, respectively.

Moderator Analyses

Different Forms of Cultural Diversity Climate Approaches

All the contact conditions we investigated (equal status, cooperation, association, authority support), and the category mixed/overall (i.e., for measures including more than one contact condition) showed statistically significant relationships with the overall outcomes ($.188 < r < .252$; ps ranging from $<.001$ to .002; see Table 5 for all correlation coefficients and 95% CIs; see also Figure 6). The omnibus test was not significant, $F(4, 6.22) = .801$, $p = .565$, and the pairwise comparisons between the conditions also did not reveal any significant differences between the conditions. No correlations were available for the common goals contact condition; therefore, this condition could not be considered.

The different forms of multiculturalism climate (important differences, being affirmed in one's own culture) and the mixed/overall category were significantly and positively related to the overall outcomes ($.093 < r < .156$; ps ranging from .002 to .013; see Table 5 for all correlation coefficients and 95% CIs; see also Figure 7). Neither the omnibus test, $F(2, 8.63) = 12.6$, $p = .354$, nor any of the pairwise comparisons were statistically significant, indicating that the strengths of the associations did not differ between the forms of multiculturalism climate.

None of the colorblind climate forms (assimilation, ignoring differences, similarities, uniqueness) were significantly correlated with the overall outcomes ($.009 < r < .272$; ps ranging from .057 to .930; see Table 5 for all correlation coefficients and 95% CIs; see also Figure 8). As there was only one study that included uniqueness, the respective CIs were very large. The omnibus test was not significant ($F_{naive} = 115.7$, $p_{cwb} = .080$), and the pairwise comparisons between the forms of colorblind climate were not significant either.

For the different forms of intergroup contact theory's optimal contact conditions and the different forms of multiculturalism climate, we were further able to conduct moderator analyses for the three outcome categories separately (see Table 6). All optimal contact conditions were significantly related to intergroup outcomes, academic outcomes, and socioemotional outcomes ($.138 < r < .327$; ps ranging from $<.001$ to .022; see Table 6), with one exception: Cooperation was not significantly linked to academic ($p = .074$) or socioemotional ($p = .119$) outcomes. Nonetheless, due to the small number of effect sizes for cooperation for these categories, this finding should be interpreted with caution. For relationships between optimal contact conditions and intergroup outcomes, $F(4, 9.46) = 0.86$, $p = .523$, and academic outcomes, $F_{naive} = 4.70$, $p_{cwb} = .271$, the omnibus tests were not statistically significant. Furthermore, none of the pairwise comparisons were statistically significant. For socioemotional outcomes, the omnibus test was not statistically significant either, $F(4, 1.68) = 0.82$, $p = .628$. Still, pairwise comparisons revealed significant differences between effect sizes for the equal status contact condition and for the mixed/overall category, comprising correlations that were based

Table 5

Meta-Analytic Correlations Between Optimal Contact Conditions, Multiculturalism Climate, and Colorblind Climate and the Overall Outcomes Moderated by the Different Forms

Cultural diversity climate form	*N*	*k*	*r*	*SE*	*t*	*df*	*p*	95% CI *LL*	95% CI *UL*	95% PI *LL*	95% PI *UL*
Intergroup contact theory's optimal contact conditions: $F(4, 6.22) = 0.801$, $p = .565$											
Equal status	32	112	.188	.024	7.84	21.15	<.001	.139	.236	−.204	.525
Cooperation	2	12	.209	.021	10.12	3.22	.002	.147	.269	−.148	.563
Association	9	51	.217	.022	9.85	8.55	<.001	.168	.265	−.136	.538
Authority support	7	35	.193	.014	13.71	7.47	<.001	.161	.225	−.137	.505
Mixed/overall	27	118	.252	.030	8.63	12.45	<.001	.190	.312	−.132	.572
Multiculturalism climate: $F(2, 8.63) = 1.18$, $p = .354$											
Important diff.	11	37	.156	.034	4.67	7.71	.002	.079	.232	−.206	.472
Affirmation	7	29	.147	.036	4.08	4.32	.013	.050	.241	−.276	.558
Mixed/overall	17	103	.093	.027	3.47	10.58	.006	.034	.151	−.247	.411
Colorblind climate: $F_{naive} = 115.7$, $p_{cwb} = .080$											
Ignoring diff.	4	12	.009	.092	0.10	2.89	.930	−.284	.300	−.443	.455
Assimilation	3	17	−.050	.044	−1.13	3.53	.328	−.176	.079	−.274	.145
Similarities	5	39	.119	.048	2.51	4.70	.057	−.005	.240	−.213	.411
Uniqueness	1	2	.272	.096	2.91	1.56	.133	−.260	.677	[a]	[a]

Note. Intergroup contact theory's common goals condition was not assessed separately in any study. Positive *r* values indicate positive effects (all correlation coefficients were coded so that higher values reflected more positive manifestations). *N* = number of studies; *k* = number of effect sizes; *r* = mean-weighted effect size; *SE* = standard error of the effect size; *t*, *df*, *p* = test of significance of estimates using cluster robust variance estimation; 95% CI = 95% confidence interval; 95% PI = 95% prediction interval; *LL* = lower limit; *UL* = upper limit; $F(df1, df2)$, *p* = test of moderators using cluster robust variance estimation; F_{naive}, p_{cwb} = test of moderators for small samples using cluster wild bootstrapping; Important diff. = important differences; Ignoring diff. = ignoring differences.

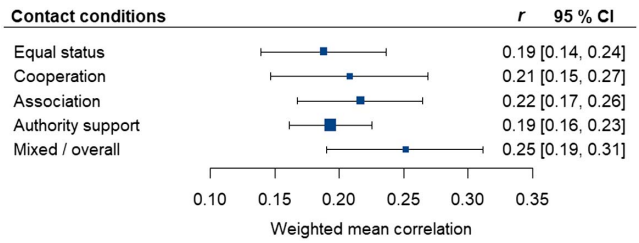
[a] Due to the small number of studies, it is not possible to calculate meaningful prediction intervals.

on measures that included more than one contact condition, $F(1, 17.9) = 7.25$, $p = .015$, with significantly larger effects for the latter.

The multiculturalism climate forms were significantly related to academic and socioemotional outcomes ($.073 < r < .224$; *p*s ranging from .003 to .028; see Table 6). As can be seen in Table 6, the different forms of multiculturalism climate were not significantly related to intergroup outcomes. None of the omnibus tests were significant; for intergroup outcomes: $F(2, 3.76) = 5.11$, $p = .085$; for academic outcomes: $F(2, 5.69) = 3.19$, $p = .117$; for socioemotional outcomes: $F(2, 7.48) = 0.96$, $p = .426$, and the same applied to all pairwise comparisons.

Figure 6

Forest Plot of Mean-Weighted Correlations for the Different Contact Conditions With 95% Confidence Intervals



Note. *r* = mean-weighted effect size; CI = confidence interval. See the online article for the color version of this figure.

Percentage of Majority Group Members in the Sample

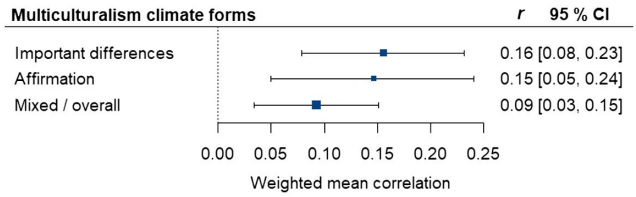
For the relationship between intergroup contact theory's optimal contact conditions and the overall outcomes, the results indicated a significant effect of the proportion of majority group members in the sample ($\beta = -0.0005$, $p = .015$; Table 7), with smaller effects in the presence of a larger percentage of majority group members. Figure 9 shows that the relationship between optimal contact conditions and the overall outcomes significantly decreased in the presence of a larger percentage of majority group members. The relationship for samples containing only minority group students amounted to $r = .231$ ($p < .001$; see intercept in Table 7); however, even for (hypothetical) groups without minority students (i.e., majority group students only), the relationship remained statistically significant ($r = .187$, $p < .001$).

The percentage of majority group members did not significantly moderate the relationships between intergroup contact theory's optimal contact conditions and intergroup outcomes ($\beta = -0.0004$, $p = .175$), academic outcomes ($\beta = -0.0002$, $p = .433$), or socioemotional outcomes ($\beta = -0.0008$, $p = .070$) separately (see Supplemental Table S8 for details). There were also no statistically significant moderator effects from the moderator analyses involving the eight separate outcomes (see Supplemental Table S8).

The association between multiculturalism climate and the overall outcomes was not statistically significantly moderated by the percentage of majority group members in the sample ($\beta = -0.0001$, $p = .615$; see Table 7). A graphical representation of the moderator effect is given in Figure 10, which shows that the relationship remained unaffected by the sample composition (for samples

Figure 7

Forest Plot of Mean-Weighted Correlations for the Different Forms of Multiculturalism Climate With 95% Confidence Intervals



Note. Affirmation = being affirmed in one's culture; r = mean-weighted effect size; CI = confidence interval. See the online article for the color version of this figure.

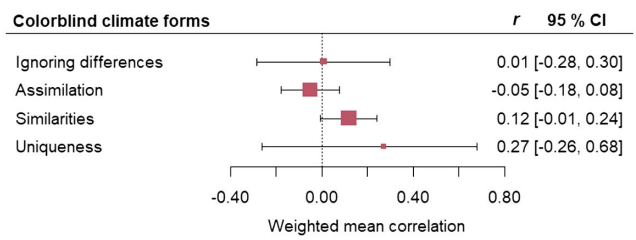
containing minority students only: $r = .125$, $p < .001$ [see Table 7]; for samples containing majority students only: $r = .117$, $p < .001$). The percentage of majority group members was also not identified as a significant moderator of relationships between multiculturalism climate and intergroup outcomes ($B = 0.0005$, $p = .327$), academic outcomes ($B = -0.002$, $p = .501$), or socioemotional outcomes ($B = 0.0000$, $p = .974$; see Supplemental Table S9), and none of the moderator effects were statistically significant for the eight separate outcomes (see Supplemental Table S9).

Also, for colorblind climate, neither the relationship with the overall outcomes ($B = -0.0007$, $p = .570$, Table 7), nor any of the relationships with the three outcome categories of intergroup ($B = -0.0005$, $p = .838$), academic ($B = -0.0001$, $p = .576$), or socioemotional outcomes ($B = -0.0007$, $p = .384$) were moderated by the percentage of majority group members (Supplemental Table S10). Figure 11 displays the moderator effect for the overall outcomes. Although the moderating effect was not significant, descriptively, the presence of a larger percentage of majority group members ($r = .022$, $p = .809$ for majority group member samples only) decreased the nonsignificant relationship between colorblind climate and the overall outcomes ($r = .090$, $p = .067$ for minority group member samples only; see Table 7). However, as this set of analyses considered all forms of colorblind climate together, we deem it less informative than the analyses on the different forms reported below and in Supplemental Table S11. No moderator analyses could be conducted for the eight separate outcomes due to the limited numbers of studies and effect sizes.

Of particular importance, as we expected potentially differentiated patterns of moderating effects for the distinct forms of colorblind climate (ignoring differences, assimilation, similarities), we conducted moderator analyses for the different forms of colorblind climate. The moderating effects for relationships with the overall outcomes were not statistically significant for any of the forms of colorblind climate (Supplemental Table S11). Nevertheless, the association between colorblind climate of the ignoring differences form and intergroup outcomes was significantly moderated by the percentage of majority group members in the sample. This finding means that ignoring differences was associated with lower levels of positive intergroup outcomes (i.e., more negative intergroup outcomes) in studies with larger proportions of majority group members ($B = -.0043$, $p = .045$). The percentage of majority group members also significantly moderated the relationship between ignoring differences and academic outcomes ($B = .0184$, $p = .035$), with a more positive relationship with academic outcomes in the presence of a larger number of majority group members. The moderating effects were not statistically significant for the other forms of colorblind climate (Supplemental Table S11).

Figure 8

Forest Plot of Mean-Weighted Correlations for the Different Forms of Colorblind Climate With 95% Confidence Intervals



Note. r = mean-weighted effect size; CI = confidence interval. See the online article for the color version of this figure.

Furthermore, the percentage of majority group members did not significantly moderate the association between critical consciousness climate ($B = 0.0006$, $p = .214$) and the overall outcomes (see Table 7). Figure 12 displays the moderator effect and shows that the relationship between critical consciousness climate and the overall outcomes, which just failed to reach statistical significance for minority group member samples only ($r = .062$, $p = .051$; see Table 7), descriptively increased in magnitude with an increasing number of majority group members (with an effect for majority group member samples of $r = .125$, $p = .037$). For critical consciousness climate, no moderator analyses were conducted for the separate outcome categories.

No significant moderator effects were obtained for polyculturalism climate ($B = 0.0002$, $p = .816$; see Table 7). We did not conduct moderator analyses for the separate outcome categories and did not plot the moderating effects due to the small number of included studies, samples, and effect sizes.

We took advantage of the fact that some studies reported correlations separately for majority and minority group members or relied on samples consisting exclusively of majority or minority group members. The results of these additional analyses in which we compared the strengths of the relationships with the overall outcomes for minority versus majority group members did not reveal any statistically significant differences in the effects of contact conditions, multiculturalism climate, colorblind climate, or critical consciousness climate (see Supplemental Table S12; polyculturalism climate was excluded due to the small numbers of studies, samples, and effect sizes). For optimal contact conditions, we also ran analyses for the three outcome categories and the eight separate outcomes. None of the effects for contact conditions differed significantly between the majority and minority group members (see Supplemental Table S13 for relationships with the three outcome categories and Supplemental Table S14 for relationships with the eight outcome categories). Nonetheless, the effect for the category of socioemotional outcomes was closest to attaining statistical significance, $F(1, 5.44) = 5.00$, $p = .071$ (minority group members: $r = .271$, $p < .001$; majority group members: $r = .194$, $p < .001$). For multiculturalism climate, none of the differences for the three outcome categories were statistically significant (see Supplemental Table S13). We were also able to

Table 6

Meta-Analytic Correlations Between Optimal Contact Conditions and Multiculturalism Climate and the Three Outcome Categories Moderated by the Different Forms

Outcome and cultural diversity climate form	*N*	*k*	*r*	*SE*	*t*	*df*	*p*	95% CI *LL*	95% CI *UL*
Intergroup contact theory's optimal contact conditions									
Intergroup outcomes: $F(4, 9.46) = 0.86$, $p = .523$									
Equal status	23	38	.241	.047	5.23	18.42	<.001	.146	.331
Cooperation	2	6	.206	.040	5.28	5.07	.003	.107	.301
Association	6	17	.221	.040	5.64	7.26	.001	.130	.308
Authority support	6	25	.173	.024	7.23	6.55	<.001	.116	.229
Mixed/overall	14	39	.237	.031	7.75	8.09	<.001	.168	.303
Academic outcomes: $F_{naive} = 4.70$, $p_{cwb} = .271$									
Equal status	12	39	.138	.029	4.76	8.35	.001	.072	.203
Cooperation	1	4	.222	.029	7.76	1.05	.074	−.103	.505
Association	7	22	.198	.044	4.52	5.03	.006	.087	.305
Authority support	2	5	.258	.033	8.07	1.74	.022	.101	.403
Mixed/overall	12	34	.177	.025	7.17	5.11	.001	.115	.239
Socioemotional outcomes: $F(4, 1.68) = 0.82$, $p = .628$									
Equal status	20	35	.180	.032	5.61	12.98	<.001	.112	.247
Cooperation	1	2	.233	.050	4.70	1.09	.119	−.287	.647
Association	7	12	.251	.033	7.85	6.99	<.001	.177	.322
Authority support	3	5	.216	.042	5.23	3.07	.013	.088	.338
Mixed/overall	14	45	.327	.052	6.55	8.76	<.001	.218	.428
Multiculturalism climate									
Intergroup outcomes: $F(2, 3.76) = 5.11$, $p = .085$									
Important diff.	8	17	.061	.041	1.48	5.94	.190	−.040	.161
Affirmation	3	4	−.086	.047	−1.84	2.04	.205	−.278	.112
Mixed/overall	7	17	.064	.063	1.01	5.37	.357	−.095	.220
Academic outcomes: $F(2, 5.69) = 3.19$, $p = .117$									
Important diff.	4	8	.214	.056	3.87	3.76	.020	.058	.360
Affirmation	6	17	.186	.034	5.50	4.33	.004	.096	.273
Mixed/overall	12	52	.073	.028	2.63	9.51	.026	.011	.134
Socioemotional outcomes: $F(2, 7.48) = 0.96$, $p = .426$									
Important diff.	7	12	.221	.055	4.09	6.04	.006	.091	.345
Affirmation	4	8	.224	.037	6.23	4.11	.003	.127	.316
Mixed/overall	12	34	.135	.051	2.64	8.60	.028	.019	.247

Note. Intergroup contact theory's common goals condition was not assessed separately in any study. Positive *r* values indicate positive effects (all correlation coefficients were coded so that higher values reflected more positive manifestations). *N* = number of studies; *k* = number of effect sizes; *r* = mean-weighted effect size; *SE* = standard error of the effect size; *t*, *df*, *p* = test of significance of estimates using cluster robust variance estimation; 95% CI = 95% confidence interval; *LL* = lower limit; *UL* = upper limit; $F(df1, df2)$, *p* = test of moderators using cluster robust variance estimation; F_{naive}, p_{cwb} = test of moderators for small samples using cluster wild bootstrapping; Important diff. = important differences; Affirmation = being affirmed in one's culture.

investigate six out of the eight separate outcomes for multiculturalism climate (see Supplemental Table S15). There were no significant differences between the correlations for majority versus minority group members, with the exception of motivation, $F(1, 2.58) = 20.10$, $p = .028$, for which significantly larger effects were documented for minority group members ($r = .163$, $p = .002$) than for majority group members ($r = .133$, $p = .006$).

Age and Educational Level

The results of analyses for students' age as a potential moderator did not show significant effects for any of the cultural diversity climate approaches we considered (Supplemental Table S16). Yet, educational level moderated the effects for intergroup contact theory's optimal contact conditions in that significantly larger effects emerged for secondary than for primary school samples, $F(1, 9.13) = 5.72$, $p = .040$ (primary: $r = .139$, $p = .005$; secondary: $r = .228$, $p < .001$, Table 8). For multiculturalism climate studies, we found no significant moderating effect of educational level, $F(1, 2.87) = 0.19$, $p = .693$ (primary: $r = .096$, $p = .160$; secondary: $r = .118$, $p < .001$). All studies on colorblind climate, critical consciousness climate, and polyculturalism climate were conducted in secondary education; thus, we could not run moderator analyses for education level.

Table 7

Results of Moderator Analyses for Percentage of Majority Group Members in the Sample for All Cultural Diversity Climate Approaches and Their Relationships With the Overall Outcomes

Moderation by percentage of majority group member	*r*	*SE*	*t*	*df*	*p*	95% CI	
						LL	*UL*
Intergroup contact theory's optimal contact conditions: $F(1, 7.64) = 9.84$, $p = .015$							
Intercept	.2310	.0181	13.01	27.04	<.001	.1960	.2660
Majority group	−.0005	<.0001	−3.14	7.64	.015	−.0008	.0000
Multiculturalism climate: $F(1, 6.35) = 0.28$, $p = .615$							
Intercept	.1250	.0187	6.72	14.59	<.001	.0854	.1640
Majority group	−.0001	.0002	−0.53	6.35	.615	−.0005	.0003
Colorblind climate: $F(1, 1.93) = 0.46$, $p = .570$							
Intercept	.0898	.0363	2.48	4.09	.067	−.0100	.1880
Majority group	−.0007	.0010	−0.68	1.93	.570	−.0051	.0038
Critical consciousness climate: $F_{naive} = 5.67$, $p_{cwb} = .075$							
Intercept	.0617	.0224	2.76	3.99	.051	−.0004	.1230
Majority group	.0006	.0003	1.91	1.75	.214	−.0010	.0023
Polyculturalism climate: $Q_{mod}(1)^a = .054$, $p = .816$							
Intercept	.1464	.0482	3.06[a]		.002	.0530	.2420
Majority group	.0002	.0009	0.23[a]		.816	−.0016	.0020

Note. Positive *r* values indicate positive effects (all correlation coefficients were coded so that higher values reflected more positive manifestations). Positive effects of the "majority group" indicate larger effects in the presence of more majority group members in the sample. *r* = mean-weighted effect size; *SE* = standard error of the effect size; *t, df, p* = test of significance of estimates using cluster robust variance estimation; 95% CI = 95% confidence interval; *LL* = lower limit; *UL* = upper limit; $F(df1, df2)$, *p* = test of moderators using cluster robust variance estimation; F_{naive}, p_{cwb} = test of moderators for small samples using cluster wild bootstrapping; $Q_{mod}(df)$ = test of moderator using the heterogeneity coefficient *Q*.

[a] As there were only two studies for polyculturalism climate available, no cluster robust variance estimation was possible, and instead, *Q* and *z* statistics are reported.

World Region

For intergroup contact theory's optimal contact conditions, the omnibus test was not significant, $F(1, 2.12) = 3.11$, $p = .234$ (Table 9). Excluding the two studies from other world regions, a follow-up pairwise comparison between studies from the United States and studies from Europe revealed that there were significantly larger effects, $F(1, 33.4) = 8.86$, $p = .005$, reported in studies from the United States, $r = .260$, $p < .001$, in comparison with European studies, $r = .165$, $p < .001$. For multiculturalism climate, studies from the United States showed descriptively larger effects ($r = .175$, $p < .001$) than studies from Europe ($r = .105$, $p < .001$); however, the moderator analysis did not yield a statistically significant effect, $F(1, 12.7) = 3.98$, $p = .068$ (see Table 9). No significant effects for world region (United States vs. Europe) as a moderator were obtained for colorblind climate, $F(1, 3.65) = 0.61$, $p = .483$, or critical consciousness climate, $F_{naive} = 0.009$, $p_{cwb} = .921$. Colorblind climate was not significantly related to the outcomes in studies from Europe, $r = .042$, $p = .466$, or in studies from the United States, $r = .099$, $p = .199$. Critical consciousness climate was significantly associated with the outcomes in studies from Europe, $r = .089$, $p = .029$, but not in studies from the United States, $r = .093$, $p = .231$. All studies on polyculturalism climate came from Europe.

Source of Information

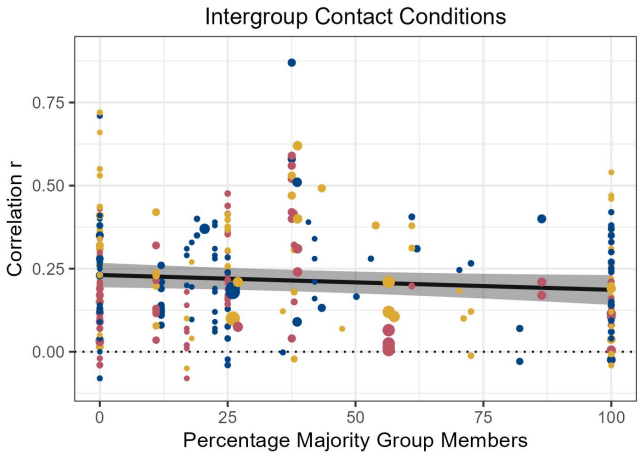
When colorblind climate was measured with student surveys, the effects were significantly different than when teacher surveys were used ($F_{naive} = 12.74$, $p_{cwb} = .020$; see Supplemental Table S17). Student-reported colorblind climate measures showed larger effects on the overall outcomes, $r = .124$, $p = .043$, than teacher-reported colorblind climate measures, $r = -.052$, $p = .217$. The moderator analyses for multiculturalism climate pointed in the same direction (larger effects for student-reported climate) but were not statistically significant, $F(1, 4.98) = 5.0$, $p = .076$ (student-reported multiculturalism climate: $r = .138$, $p < .001$; teacher-reported multiculturalism climate: $r = .015$, $p = .798$). For the other cultural diversity climate approaches, it was not possible to test for moderating effects of source of information, as the critical consciousness climate and polyculturalism climate studies relied exclusively on student reports, and only four teacher-reported effect sizes were available for intergroup contact theory's optimal contact conditions.

Percentage of Female Participants in the Sample

We tested for whether the percentage of female participants in a sample moderated the strengths of the relationships that intergroup contact theory's optimal contact conditions, multicultur-

Figure 9

Moderating Effect of the Percentage of Majority Group Members in the Sample for Intergroup Contact Theory's Optimal Contact Conditions



Note. Colors reflect different outcome categories (blue = intergroup outcomes; red = academic outcomes; yellow = socioemotional outcomes). *r* = mean-weighted effect size. See the online article for the color version of this figure.

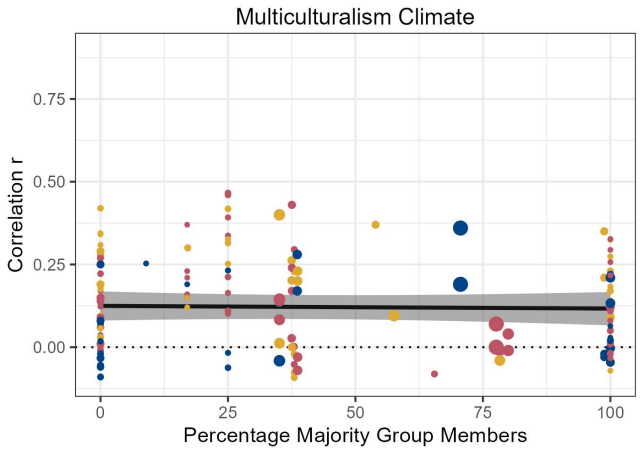
alism climate, colorblind climate, and critical consciousness climate had with the overall outcomes. We found no significant moderating effects. Supplemental Table S18 presents all the results.

Level of Analysis

Level of analysis did not significantly moderate the associations that intergroup contact theory's optimal contact conditions, multiculturalism climate, colorblind climate, and critical consciousness climate had with the overall outcomes (see Supplemental Table S19).

Figure 10

Moderating Effect of the Percentage of Majority Group Members in the Sample for Multiculturalism Climate



Note. Colors reflect different outcome categories (blue = intergroup outcomes; red = academic outcomes; yellow = socioemotional outcomes). *r* = mean-weighted effect size. See the online article for the color version of this figure.

Publication Year

For four of the five cultural diversity climate approaches, we were able to conduct moderator analyses for publication year. Publication year did not significantly moderate the magnitudes of the associations between intergroup contact theory's optimal contact conditions, multiculturalism climate, colorblind climate, or critical consciousness climate and the overall outcomes (see Supplemental Table S20).

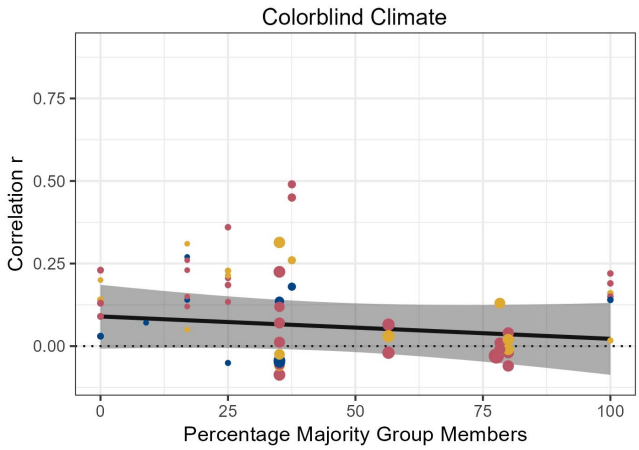
Additional Analyses: Number of Diversity Climate Approaches and the Role of Intergroup Contact Theory's Optimal Contact Conditions

In additional analyses, we tested for whether the number of approaches coded for a study (one to five approaches) affected the magnitudes of the relationships with the overall outcomes and with the three outcome categories of intergroup outcomes, academic outcomes, and socioemotional outcomes. None of the moderator effects were statistically significant (see Supplemental Table S21).

We additionally tested for whether the strengths of the effect sizes differed between (a) studies for which only the relationships between intergroup contact theory's optimal contact conditions and the outcomes were coded and included in the meta-analysis, (b) studies for which the relationship between optimal contact conditions and at least one additional approach was coded and included in the meta-analysis, and (c) studies for which only relationships with other approaches (and not contact conditions) were coded and included in the meta-analysis. The omnibus test was statistically significant, $F(2, 14.80) = 9.73$, $p = .002$. Pairwise comparisons, $F(1, 7.74) = 9.08$, $p = .017$, indicated that studies with only optimal contact conditions ($r = .226$, $p < .001$) yielded larger effects than studies with contact conditions and at least one additional approach ($r = .143$, $p < .001$). Also, pairwise comparisons, $F(1, 24.20) = 17.40$, $p < .001$, indicated that studies with only optimal contact conditions reported larger relationships with the overall outcomes than studies that included only other approaches and no contact conditions ($r = .088$, $p = .009$). No statistically significant differences emerged between studies with contact conditions and at least one additional approach and studies with approaches other than contact conditions, $F(1, 21.40) = 2.20$, $p = .153$. The same pattern was found for relationships with intergroup outcomes (see Supplemental Table S22). With respect to academic outcomes, effects reported in studies with contact conditions and at least one additional approach were not statistically significantly different from effects reported in studies with only contact conditions and effects reported in studies with approaches other than contact conditions. Nevertheless, effects from studies with only contact conditions were significantly larger than effects from studies with approaches other than contact conditions. For socioemotional outcomes, the studies with only optimal contact conditions demonstrated larger relationships than the studies with contact conditions and at least one additional approach. Detailed results are reported in Supplemental Table S22.

Figure 11

Moderating Effect of the Percentage of Majority Group Members in the Sample for Colorblind Climate



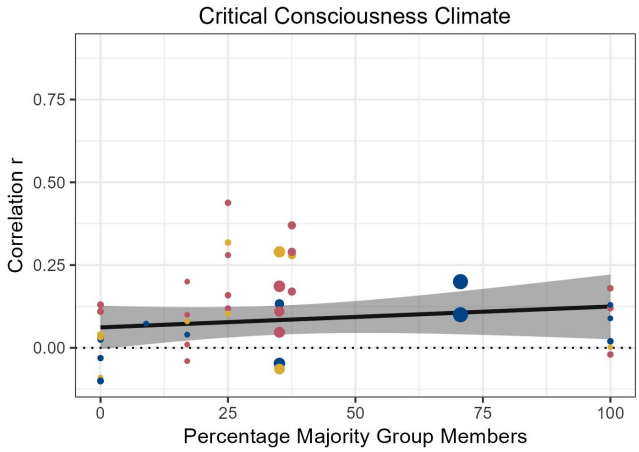
Note. Colors reflect different outcome categories (blue = intergroup outcomes; red = academic outcomes; yellow = socioemotional outcomes). *r* = mean-weighted effect size. See the online article for the color version of this figure.

Tests for Publication Bias

Multilevel Egger's regression tests showed no significant influence of effect size weights on the reported correlation sizes for intergroup contact theory's optimal contact conditions, multiculturalism climate, or colorblind climate (see Supplemental Table S23; polyculturalism climate was not considered due to the small number of studies). For critical consciousness climate, the results even revealed a negative effect of the effect size weights on the reported correlations ($\beta = -1.390$, $p = .026$), indicative of a "reverse publication bias" (i.e., smaller effects for studies with smaller samples, contrary to the publication bias assumption that studies with smaller samples would report larger effects); nonetheless, this finding was based on eight studies. Funnel plots of effect sizes for all cultural diversity climate approaches can be found in the Supplemental Figures S1–S4. Here, too, the visual inspection did not reveal any suspicious asymmetries that were indicative of publication bias.

Figure 12

Moderating Effect of the Percentage of Majority Group Members in the Sample for Critical Consciousness Climate



Note. Colors reflect different outcome categories (blue = intergroup outcomes; red = academic outcomes; green = socioemotional outcomes). *r* = mean-weighted effect size. See the online article for the color version of this figure.

Discussion

The increasing variation in cultural, ethnic, racial, and religious backgrounds in many societies (e.g., OECD, 2019; U.S. Census Bureau, 2019) creates numerous opportunities for intercultural interactions that can enrich individuals' lives and foster cross-group friendships (e.g., Suárez-Orozco et al., 2018; Tropp & Prenovost, 2008). At the same time, intergroup tensions, entrenched structural and interpersonal discrimination, racism, and the marginalization of minority groups remain persistent problems that go along with elevated risks for the lower well-being, mental health, and academic achievement of minority children and youth as well as detrimental societal consequences (e.g., Benner et al., 2018; Dimitrova et al., 2016; United Nations Committee on the Elimination of Racial Discrimination, 2021). Therefore, it is crucial for schools to establish inclusive and supportive environments where positive intergroup contact can be fostered and students with diverse backgrounds are given equal opportunities to achieve their potential, engage with their own culture(s), and learn about other students' cultural values as well as social inequities (Del Toro & Wang, 2021a; Dimitrova et al., 2016; Heberle et al., 2020; OECD, 2017). This work provides the first comprehensive and nuanced meta-analytic investigation of the associations between five cultural diversity climate approaches in schools and children's and adolescents' intergroup, academic, and socioemotional outcomes to date.

Associations Between Cultural Diversity Approaches and Intergroup, Academic, and Socioemotional Outcomes

Intergroup Contact Theory's Optimal Contact Conditions

Intergroup contact theory and its optimal contact conditions have inspired a great deal of research in recent decades (for meta-analyses, see, e.g., Beelmann & Heinemann, 2014; Lemmer & Wagner, 2015; Pettigrew & Tropp, 2006; Tropp & Pettigrew, 2005a, 2005b). So, as one of the most strongly supported theories in social psychology (Pettigrew, 2021), how does intergroup contact theory fare? Overall, the findings from the current meta-analysis are very encouraging. Optimal contact conditions showed significantly larger relationships with the outcomes than multiculturalism climate, critical consciousness climate, or colorblind climate did (see Table 2 and Figure 5). Optimal contact conditions describe contextual conditions that promote positive intergroup contact; thus, from their earliest introduction to the field, they have always referred to concrete characteristics of the context. By contrast, the other cultural diversity climate approaches have strong ties to research on personal diversity ideologies (e.g., multiculturalism as a personal ideology; e.g., Rosenthal & Levy, 2010). Thus, diversity climate

Table 8

Moderator Analyses for Educational Level for Relationships Between Optimal Contact Conditions and Multiculturalism Climate and the Overall Outcomes

Moderation by educational level	*N*	*k*	*r*	*SE*	*t*	*df*	*p*	95% CI *LL*	95% CI *UL*
Intergroup contact theory's optimal contact conditions: $F(1, 9.13) = 5.72$, $p = .040$									
Primary education	9	34	.139	.034	4.16	6.39	.005	0.059	0.218
Secondary education	36	291	.228	.019	12.27	29.31	<.001	0.191	0.265
Multiculturalism climate: $F(1, 2.87) = 0.19$, $p = .693$									
Primary education	4	11	.096	.047	2.06	2.28	.160	−0.083	0.269
Secondary education	21	149	.118	.022	5.49	17.52	<.001	0.073	0.163

Note. Studies on colorblind climate, critical consciousness climate, and polyculturalism climate relied exclusively on samples from secondary school and were therefore excluded from this moderator analysis. Positive *r* values indicate positive effects (all correlation coefficients were coded so that higher values reflected more positive manifestations). *N* = number of studies; *k* = number of effect sizes; *r* = mean-weighted effect size; *SE* = standard error of the effect size; *t*, *df*, *p* = test of significance of estimates using cluster robust variance estimation; 95% CI = 95% confidence interval; *LL* = lower limit; *UL* = upper limit; $F(df1, df2)$, *p* = test of moderators using cluster robust variance estimation.

approaches other than contact conditions may sometimes be perceived as more abstract, likely due to their associations with similarly abstract diversity ideologies, and they may be more challenging to implement than tangible contact conditions are. The difference in effects was not statistically significant for the comparison between contact conditions and polyculturalism climate, which, however, included only a few studies and effect sizes (with large confidence intervals).

Intergroup contact theory's optimal contact conditions exhibited significant and positive small-to-medium-sized correlations with the overall outcome measure (i.e., when collapsed across all outcomes) as well as with the two outcome categories of intergroup and socioemotional outcomes, and a significant small effect size was obtained for the association with academic outcomes (see Table 3). All the relationships with the eight outcomes that were considered separately were statistically significant as well, with the largest,

Table 9

Moderator Analyses for World Region for Relationships Between Optimal Contact Conditions, Multiculturalism Climate, Colorblind Climate, and Critical Consciousness Climate and the Overall Outcomes

Moderation by world region	*N*	*k*	*r*	*SE*	*t*	*df*	*p*	95% CI *LL*	95% CI *UL*
Intergroup contact theory's optimal contact conditions: $F(2, 2.12) = 3.11$, $p = .234$									
United States	23	135	.260	.025	10.83	19.16	<.001	.211	.307
Europe	21	187	.165	.022	7.44	15.25	<.001	.118	.211
Other	2	6	.177	.058	3.07	1.00	.200	−.508	.725
Multiculturalism climate: $F(1, 12.7) = 3.98$, $p = .068$									
United States	9	48	.175	.028	6.30	6.19	<.001	.108	.240
Europe	15	105	.105	.022	4.75	9.51	<.001	.056	.154
Colorblind climate: $F(1, 3.65) = 0.61$, $p = .483$									
United States	7	58	.099	.053	1.89	1.99	.199	−.127	.316
Europe	3	12	.042	.053	0.78	5.75	.466	−.090	.171
Critical consciousness climate: $F_{naive} = 0.009$, $p_{cwb} = .921$									
United States	5	39	.093	.049	1.88	1.61	.231	−.177	.349
Europe	3	11	.089	.016	5.44	2.11	.029	.022	.155

Note. All studies on polyculturalism climate were conducted in Europe, and therefore, polyculturalism climate was excluded from these moderator analyses. Positive *r* values indicate positive effects (all correlation coefficients were coded so that higher values reflected more positive manifestations). *N* = number of studies; *k* = number of effect sizes; *r* = mean-weighted effect size; *SE* = standard error of the effect size; *t*, *df*, *p* = test of significance of estimates using cluster robust variance estimation; 95% CI = 95% confidence interval; *LL* = lower limit; *UL* = upper limit; $F(df1, df2)$, *p* = test of moderators using cluster robust variance estimation; F_{naive}, p_{cwb} = test of moderators for small samples using cluster wild bootstrapping.

almost medium-sized effects for intergroup attitudes and belonging (see Table 4).

Zooming in on the three intergroup outcomes revealed a small-to-medium-sized positive correlation with (lower levels of) experienced discrimination and a small correlation with cross-group friendships, in addition to the almost medium-sized effect for intergroup attitudes. Intergroup contact theory and its optimal contact conditions have long been touted as important principles for redressing negative intergroup attitudes and promoting positive ones (e.g., Pettigrew & Tropp, 2006; Tropp et al., 2022), and our results offer further support for this prediction. The findings for discrimination and cross-group friendships are noteworthy too: The implementation of optimal contact conditions went along with lower levels of experienced discrimination and more cross-group friendships. Whereas pernicious consequences of discrimination (e.g., lower well-being and mental health outcomes; Benner et al., 2018) can be monumental, cross-group friendships uniquely contribute to children's and adolescents' social adjustment and have been found to be associated with lower prejudice and greater academic engagement (Graham et al., 2014; Tropp et al., 2016; see Killen et al., 2022, for a review). Thus, our meta-analytic finding that intergroup contact theory's optimal contact conditions are related to fewer discrimination experiences and more cross-group friendships can be used to derive concrete recommendations for educational practice.

Optimal contact conditions were significantly and positively associated with all academic outcomes as well (academic achievement, motivation, engagement), albeit to a lesser extent. Nonetheless, particularly if we consider that intergroup contact theory's contact conditions are conceptually much closer to intergroup outcomes than to academic variables, the current findings highlight the theory's broad applicability to different domains of positive child and youth development: Implementing optimal contact conditions at school seems to go hand in hand with creating academically supportive environments.

Lastly, the almost medium-sized correlation between contact conditions and belonging indicates that the successful establishment of intergroup contact theory's optimal contact conditions serves as a marker of how welcome, included, and associated a student feels in school. For the second socioemotional outcome (i.e., well-being), a significant small positive correlation surfaced in the current meta-analysis. The well-being category tapped into features relating to the self (e.g., students' self-esteem, satisfaction with life), whereas the belonging category captured social aspects (e.g., school belonging, positive student–student and student–teacher relationships) that furthermore often directly referred to the school context. It might therefore not be surprising that school-based contact conditions that were developed to initiate positive intergroup contact and are thus "social" by nature showed larger links to belonging (focusing on social aspects) than to well-being (focusing on individual features).

Multiculturalism Climate

Multiculturalism climate complements the propositions made by intergroup contact theory's contact conditions: Ensuring equal treatment and positive interactions between different groups (optimal contact conditions) matters, but engaging with and learning about cultural variations and having the opportunity to connect with one's own cultural background in school (multiculturalism climate) matters, too (e.g., Byrd, 2017; Chun & Dickson, 2011; Del Toro & Wang, 2021a). Overall, multiculturalism climate yielded significantly smaller effects than intergroup contact theory's optimal contact conditions (see Table 2 and Figure 5). This finding may be due to insecurities that teachers feel regarding multiculturalism climate, as opposed to contact conditions, which are easier to implement. For instance, teachers may be reluctant to discuss cultural differences they do not know much about and may be afraid that asking children about their heritage will be perceived as labeling and stereotyping (Schwarzenthal et al., 2018). In addition, researchers have cautioned that multiculturalism climate is often only relatively superficially implemented in schools, thus limiting the positive impact that this approach could have (e.g., Civitillo et al., 2017).

Nonetheless, when collapsing across all outcomes, we found a significant small positive relationship with multiculturalism climate (see Table 2). Significant small positive relationships with academic and socioemotional outcomes emerged, whereas the relationship with intergroup outcomes was not statistically significant (see Table 3). A closer examination of associations with the separate outcomes subsumed in these three categories revealed more differentiated insights (see Table 4). For intergroup outcomes, the results showed a significant small positive relationship with intergroup attitudes but no statistically significant relationships with cross-group friendships or discrimination; thus, it became clear that the latter two effects drove the nonsignificant relationship with the combined category of overall intergroup outcomes. Critically, the findings from our meta-analysis suggest that a multiculturalism climate has the potential to reduce negative intergroup attitudes (e.g., prejudice, stereotypes, ingroup bias; see also, e.g., Byrd, 2016), for example, because it helps people see different perspectives. Albeit there are theoretically sound reasons to expect positive links between multiculturalism climate and cross-group friendships, such a result was not substantiated by the meta-analysis, perhaps due to the comparably smaller number of studies on cross-group friendships. Moreover, a particularly important finding was the nonsignificant association identified between multiculturalism and experienced discrimination, which helped resolve existing ambiguities. Individual studies scattered across the literature have suggested that the size and direction of the effect is somewhat inconsistent (e.g., Oczlon et al., 2021; Schwarzenthal et al., 2018). Accordingly, some scholars have cautioned that multiculturalism climate may come with the risk of elevated discrimination experiences. Our meta-analysis provides the sought-after answer: Multiculturalism climate at school and experienced discrimination are unrelated. Alternatively, this finding could mean that multiculturalism climate might simultaneously reduce discrimination and raise awareness of discrimination, with such effects thereby counterbalancing each other. It may also be the case that in some studies, multiculturalism climate was implemented superficially, thus promoting discrimination and stereotyping, and in other studies sensitively, thus reducing discrimination.

Shifting the focus to academic outcomes revealed that multiculturalism climate exhibited significant small positive correlations with academic achievement and motivation, with a larger effect size for motivation. The size of the association with academic engagement was comparable to the effect size for achievement, but the effect

for engagement was not statistically significant. Interestingly, the nonsignificant finding for engagement was thus in contrast to results from Wang et al.'s (2020) meta-analysis, which demonstrated significant positive relationships between cultural socialization at home (a concept that is similar to multiculturalism climate at school) and school engagement. However, cultural socialization in the family usually mainly parallels the being affirmed in one's culture form of multiculturalism at school (see, e.g., Wang et al., 2020). It may therefore be possible that the being affirmed in one's culture form of multiculturalism climate is more strongly related to engagement than the important differences form, but this meta-analysis did not disentangle these effects with respect to relationships with engagement.

Furthermore, multiculturalism climate was significantly and positively associated with belonging and was not significantly related to well-being. As already discussed for intergroup contact theory's optimal contact conditions above, multiculturalism climate at school also appears to be more proximal to belonging outcomes, which have often been assessed with reference to the school environment and a focus on positive interpersonal relationships with others at school. Also, multiculturalism climate represents an identity-conscious climate (see also, e.g., Rosenthal & Levy, 2010), as it sparks deeper engagement with concepts such as culture, ethnicity, or race as defining aspects of who we and the others around us are. Thus, a multiculturalism climate at school likely evokes identity-related exploration processes, which may be challenging and even uncomfortable when first initiated. Such identity-related exploration processes might not immediately boost positive feelings about the self. For instance, research on racial–ethnic identity has found that some aspects of racial–ethnic identity exploration are (cross-sectionally) negatively related to well-being (e.g., Syed et al., 2013). Therefore, multiculturalism climate's positive effects on individuals' well-being may take longer to unfold—a process that could not be captured in the current meta-analysis but offers promising avenues for future longitudinal research.

Colorblind Climate

Colorblind climate represents the only cultural diversity climate approach comprising different forms for which contrasting effects could be expected on the basis of theory. Effects of different forms of colorblind climate may thus cancel each other out when looking at effects of a colorblind climate conglomerate. Therefore, we only briefly refer to average effects across the forms of colorblind climate without distinguishing between its different forms here and pay closer attention to colorblind climate when discussing key findings for moderation analyses, which allowed us to disentangle effects for distinct forms of colorblind climate and their interactions with the percentage of majority group members in each sample. When collapsing across all outcomes, this meta-analysis revealed a nonsignificant association with colorblind climate (see Table 2 and Figure 5). In addition, as hypothesized, none of the associations with the three outcome categories of intergroup, academic, and socioemotional outcomes were statistically significant (see Table 3), and the same pattern held when the eight outcomes were investigated separately (see Table 4).

Critical Consciousness Climate

A critical consciousness climate directly analyzes and addresses social inequities and structural barriers that marginalized groups face and thus prepares students to become citizens of diverse, democratic, and more equitable societies (Gorski, 2016; Schwarzenthal et al., 2022). In comparison with research on critical consciousness as a personal orientation, less attention has been devoted to critical consciousness climate (see also Heberle et al., 2020), although there has been an uptick in the literature on this cultural diversity climate research approach in recent years (e.g., Bañales, Aldana, et al., 2021; Juang et al., 2020; Schwarzenthal et al., 2022). Given that syntheses of the emerging evidence based on critical consciousness climate have been absent so far, the current meta-analysis represents an important step toward closing this gap.

The results yielded a significant small effect when all outcomes were considered jointly (see Table 2 and Figure 5). Closer inspections revealed that the relationship between critical consciousness climate and intergroup outcomes was not statistically significant, but critical consciousness climate showed a significant small positive association with academic outcomes and a slightly smaller significant association with socioemotional outcomes (see Table 3). One reason for the nonsignificant association with intergroup outcomes may be related to the fact that critical consciousness climate increases awareness of inequities and systemic disadvantages of minority groups in comparison with majority groups (e.g., Bañales, Aldana, et al., 2021; Schwarzenthal et al., 2022). This awareness might not help improve intergroup attitudes and relationships, at least in the short term, for example, because some students (especially minority group members) may develop negative feelings about outgroup members (especially majority group members), and others (especially majority group members) may feel threatened (e.g., Wright & Lubensky, 2009). Another explanation could be that critical consciousness climate deals with complex issues, and more time may therefore be needed to process, integrate, and engage in critical reflection (e.g., Schwarzenthal et al., 2022) before a critical consciousness climate can positively affect intergroup outcomes. It is furthermore plausible that a critical consciousness climate is related to some but not to other specific intergroup outcomes (see also the findings for multiculturalism climate).

Critical consciousness climate exhibited a significant small association with academic outcomes. There are three potential routes that potentially underlie the obtained effect, and these routes can be tested in studies that follow up on our work. First, positive links between a critical consciousness climate, adaptive teaching practices, and positive aspects of school climate have been reported (e.g., Byrd, 2017). Critical consciousness climate may operate as part of an array of academically relevant teaching practices and aspects of the school or classroom climate that mutually influence each other and promote students' academic thriving. Second, a teacher who implements a critical consciousness climate is directly integrating current societal issues into their teaching, and such issues may be of interest to many students or may spark their interest due to the real-life relevance of the material. A critical consciousness climate may therefore be aligned with students' interests, and many studies have documented the value of tailoring one's teaching to match students' interests in order to enhance students' motivation, achievement, and continued engagement (e.g., Reber et al., 2018).

Third, a recent review on critical consciousness as a personal ideology suggested that critical consciousness explains variance in academic outcomes (Heberle et al., 2020). It may therefore be the case that critical consciousness climate leads students to develop higher levels of personal critical consciousness, which then positively affects their academic development.

Lastly, critical consciousness climate was associated with higher levels of socioemotional functioning in children and youth. As a critical consciousness climate involves acknowledging the life realities of marginalized groups, it signals to minority students that these issues are taken seriously, thus enhancing their socioemotional outcomes. It may also prevent minority students from feeling that the deficits reside within themselves and may instead empower them to challenge oppressive systems (Heberle et al., 2020). At the same time, a critical consciousness climate likely engenders more critical and social-justice-focused actions in all students, including majority group students (e.g., Dull et al., 2022; Hazelbaker et al., 2022; Heberle et al., 2020), and such a process could be conducive to their socioemotional development as well (e.g., by fostering self-efficacy and feelings of agency; Maker Castro et al., 2022).

Polyculturalism Climate

Scholars have just recently begun to explore polyculturalism climate at school and its correlates (e.g., Juang et al., 2020; Rissanen et al., 2023). In our meta-analysis, a significant small positive correlation with polyculturalism climate emerged for the overall outcomes (see Table 2 and Figure 5). Polyculturalism climate had small-to-medium positive associations with academic outcomes and socioemotional outcomes, but no significant associations were found with intergroup outcomes (see Table 3). The initial evidence derived from our meta-analysis suggests that polyculturalism climate holds promise; at the same time, the findings should not be overestimated and are best considered preliminary findings given the limited number of effect sizes that were found and included. Nonetheless, it has been proposed that polyculturalism climate can overcome some of the weaknesses of other approaches (e.g., some multiculturalism climate implementations involve only a superficial focus on differences) while not contradicting their strengths (Schachner et al., 2021; Rosenthal & Levy, 2010). We hope that this meta-analysis will serve as a steppingstone that inspires more research on polyculturalism climate in schools.

Effects of Moderators

Forms of Cultural Diversity Climate

In their seminal meta-analysis, Pettigrew and Tropp (2006) argued that, when implemented, intergroup contact theory's optimal contact conditions are best understood as interrelated and mutually reinforcing (see also Tropp et al., 2022). Nonetheless, these authors also proposed that authority support may be an especially important condition for facilitating positive contact effects (Pettigrew & Tropp, 2006). A decade later, Paluck et al. (2019) reevaluated and updated intergroup contact theory's effects on prejudice and stated that, on the basis of the currently available evidence, not much is known about which exact contact conditions are vital for reducing individuals' prejudice. The current meta-analysis adds to this information while expanding the scope of previous work to include a range of additional outcomes in addition to intergroup attitudes. Overall, we found very limited evidence of differences in the magnitudes of the associations with the outcome variables for the different optimal contact conditions (see Table 5 and Figure 6 for the overall outcomes and Table 6 for the three outcome categories). Specifically, only for relationships with socioemotional outcomes were significant differences documented between effect sizes for the equal status contact condition and effect sizes that were based on overall/mixed measures (assessing more than one contact condition), with larger effects for the latter. We draw four conclusions from these findings.

First, as we did not identify significant differences between any of the conditions in their relationships with intergroup outcomes, academic outcomes, and, for most conditions, socioemotional outcomes, we conclude that *all* the contact conditions are positive and relevant. This conclusion is corroborated by the fact that significant positive relationships with the outcomes emerged for all the contact conditions (except for some relationships with cooperation, for which only a few effect sizes could be included). Second, the differences in effect sizes for socioemotional outcomes might suggest that ensuring equal status might not be enough to foster socioemotional outcomes and that taking a broader approach, as captured by the overall/mixed category to some extent, may instead prove to be more beneficial. At the same time, we cannot rule out the possibility that in schools and classes in which (minority) students have in the past been treated less well (i.e., high actual unequal status environments), equal status was particularly emphasized by teachers (as reflected in current high equal status ratings), but it had yet to be successfully established and thus did not yet correspond with more positive socioemotional outcomes. Third, the mixed/overall category included a variety of different studies, some of which assessed all or almost all contact conditions with one scale (e.g., Molina & Wittig, 2006), whereas others combined only two, for example. Hence, it may still be the case that a truly multidimensional approach to the assessment of contact conditions (i.e., assessing all of them together, in line with Pettigrew and Tropp's, 2006, notion of contact conditions as an "interrelated bundle") is superior to focusing on single conditions. Systematic comparisons of the effects of single contact conditions versus effects of comprehensive multiple condition measures in future research lie ahead. Fourth, some may criticize that we included "associations" along with the four classical contact conditions in the tradition of Allport (1954). In addition, scales capturing "associations" often did not reflect tangible dimensions of the school or class climate or teaching approaches but instead tapped into intergroup contact quality more globally. Thus, one may suspect that including "associations" may muddy the findings for intergroup contact theory's optimal contact conditions. Nonetheless, as indicated by the moderator analyses, the effects for optimal contact conditions were not driven by pronounced relationships between "associations" and the outcomes or were undermined by smaller relationships between "associations" and the outcomes in comparison with other conditions.

No moderator effects for different forms of multiculturalism climate were found (see Table 5 and Figure 7 for the overall outcomes and Table 6 for the three outcome categories). Mirroring the pattern of relationships with overall multiculturalism climate, all three forms were not significantly related to intergroup outcomes and were significantly and positively related to academic and socioemotional outcomes. Thus, on the basis of our meta-analysis, it

can be concluded that all the forms of multiculturalism climate are equally adaptive for socioemotional and academic outcomes.

Furthermore, effect sizes for the different forms of colorblind climate (assimilation, ignoring differences, similarities, uniqueness) also did not differ significantly (see Table 5 and Figure 8). None of the different forms exhibited significant relationships with the overall outcomes, even though the small positive effect for similarities just failed to reach statistical significance. Nonetheless, we are reasonably confident that any replications of our meta-analysis conducted in the future when larger numbers of studies on different colorblind climate forms are available will be able to detect clearer differences between the different forms of colorblind climate, with potential advantages for similarities and uniqueness over assimilation and ignoring differences, in alignment with the theoretical premises (e.g., Celeste et al., 2019; Rosenthal & Levy, 2010; Schachner et al., 2021).

Percentage of Majority Group Members

For several combinations of the cultural diversity climate approaches and outcome variables, there are theoretically sound reasons to expect asymmetrical effects for minority versus majority group students (Leslie et al., 2020; Zitzmann, Loreth, et al., 2022). For intergroup contact theory's optimal contact conditions, we obtained a smaller association with the overall outcomes in the presence of a larger percentage of majority group members in the sample (see Table 7 and Figure 9). In comparison with students from majority groups, students from minority groups can feel less welcome and valued at school and are often not treated as well by teachers (e.g., Bottiani et al., 2017; Phalet & Baysu, 2020). For these reasons, positive contact resulting from implementing intergroup contact theory's optimal contact conditions may be particularly helpful for minorities (e.g., Phalet & Baysu, 2020; Thijs & Verkuyten, 2014). By contrast, majority students (and by extension, samples including a larger number of majority students) may be less affected by optimal contact conditions, meaning that optimal contact conditions should have smaller positive effects. The finding that, globally, optimal contact conditions were less advantageous in samples with more majority students lines up with these assumptions.

Nevertheless, no significant moderator effects were revealed for the three outcome categories of intergroup outcomes, academic outcomes, and socioemotional outcomes or for the eight separate outcomes (see Supplemental Table S8). The nonsignificant finding for intergroup attitudes thus also contradicts previous findings from Tropp, and Pettigrew (2005a), who showed that effects on prejudice were larger for majority group members. Thus, whereas the significant moderating effect of the percentage of majority group members for the association between optimal contact conditions and overall outcomes indicates that this moderator explained heterogeneity in the overall effects, we could not confirm this finding with regard to associations with more fine-grained outcomes. Of course, when interpreting the findings for the moderator percentage of majority group members, it must be kept in mind that in samples with a large proportion of minority members, the minority members were likely the majority in certain classrooms, which affects power dynamics and might entail differential effects of the climate. Also, if the majority group students attend class with almost no minorities, optimal contact conditions might not have an effect because there are very few people for the majority group members to have intergroup contact with. So the lack of effects in the samples with large numbers of majority members might, to some extent, not mean that contact is unrelated to attitudes in this group; rather, it might mean that contact conditions in a homogeneous environment do not have an effect. Still, it should be mentioned that nonsignificant moderating effects for socioemotional outcomes (when looking at the three outcome categories) and well-being (when looking at the eight separate outcomes) were largest and closest to reaching statistical significance. From a theoretical perspective, optimal contact conditions may be especially likely to serve as a resource for minority students' socioemotional outcomes, as they are more often exposed to experiences such as racism and discrimination that can threaten their well-being (e.g., Celeste et al., 2019; Voight et al., 2015). Nevertheless, it has also been cautioned that positive intergroup contact can exert a sedative effect on minority group members: Their satisfaction with intergroup harmony resulting from positive contact decreases support for social change and perpetuates structural inequities (e.g., Hässler et al., 2021). Albeit nonsignificant, the finding for socioemotional outcomes may be indicative of such a sedative effect. On a related note, it has been argued that group disparities need to be made salient in a contact situation to avoid these sedative effects (e.g., Cocco et al., 2024; Dovidio et al., 2016; Hässler et al., 2021); hence, combining a critical consciousness climate with positive contact resulting from optimal contact condition may help avoid sedative effects.

Contradicting our assumptions, the meta-analysis yielded no significant moderating effects of the percentage of majority group members in the sample on the associations between multiculturalism climate and the overall outcomes (Table 7 and Figure 10), the three outcome categories, or the eight separate outcome categories (Supplemental Table S9). These findings suggest that, on the basis of the currently available meta-analytic evidence, multiculturalism is advantageous for all but does not seem to be especially advantageous for minorities. The findings transmit an additional message. Specifically, it has been cautioned that multiculturalism may unintentionally come with negative effects for majority group members, as they might feel excluded or threatened (e.g., Plaut et al., 2018). Still, according to the present findings on moderating effects, such fears are unsubstantiated for associations between multiculturalism climate in schools and the outcomes we considered.

Colorblind climate represented the only cultural diversity climate approach for which we formulated hypotheses for its different forms. Specifically, by virtue of their minority status, minority students were expected to be negatively affected by assimilation and ignoring differences, whereas students belonging to the majority culture were not expected to be affected as much. There were no significant moderator effects for overall colorblind climate (comprising all the different forms) and the overall outcomes (Table 7 and Figure 11) or for the three outcome categories (Supplemental Table S10). The analyses for the colorblind climate forms provided interesting insights (see Supplemental Table S11); yet, the results should be interpreted with some caution due to the small number of studies for each form. The percentage of majority group members did not moderate associations for similarities or assimilation, but we identified two significant interactions for ignoring differences. First, we reported a significant negative interaction between ignoring differences and the percentage of majority group members in the sample. The ignoring differences form of a colorblind climate is applied to minimize and disregard differences between groups, can

perpetuate group-based inequities, and may spark hostility in majority group members (e.g., Apfelbaum et al., 2010; Leslie et al., 2020; Plaut et al., 2018). Our findings indicate that ignoring differences had more negative effects on intergroup outcomes for samples that included larger numbers of majority students. Second, the association between ignoring differences and academic outcomes increased (i.e., became more positive) with an increasing percentage of majority group members in the sample. According to social identity theory, a colorblind climate of the ignoring differences form would be identity-threatening for minority group members and should thus have negative effects on minority students' academic outcomes (e.g., Celeste et al., 2019). Our moderator analyses suggested that more positive relationships with academic outcomes emerged when there were more majority group members in the sample. This finding lends some support to social-identity-theory-based assumptions concerning negative effects of ignoring differences for minorities as compared with majorities. Although the findings for ignoring differences make a significant contribution to the literature, several open questions remain. For instance, it was surprising that the results did not indicate significant interaction effects for assimilation, which has been portrayed as particularly harmful for minorities (e.g., Baysu et al., 2021; Rosenthal & Levy, 2010).

Furthermore, no significant interaction with the percentage of majority group members emerged for critical consciousness climate (Table 7 and Figure 12) or polyculturalism climate (Table 7). Research applying a critical consciousness lens has typically focused on youth who are experiencing marginalization. More recently, scholars have increasingly recognized the importance of such approaches for individuals from privileged majority groups and their beliefs and actions (e.g., Dull et al., 2022; Hazelbaker et al., 2022). The nonsignificant moderator results for critical consciousness climate add to this recognition by showing that a critical consciousness climate yields similar effects irrespective of the composition of the sample (i.e., predominantly majority or minority).

We complemented the moderator analyses that focused on the percentage of majority group members in a sample with analyses that compared the strengths of the correlations separately for the majority and minority group members. The studies, samples, and effect sizes from these additional analyses overlapped with the ones from the moderator analyses for the percentage of majority group members in a sample; nonetheless, we were able to include a larger number of samples in the analyses for the percentage of majority group members. None of the effects on the overall outcomes differed significantly between the majority and minority group members for optimal contact conditions, multiculturalism climate, or colorblind climate (see Supplemental Table S12). Similarly, for intergroup contact theory's optimal contact conditions, no significant differences were documented for the relationships with the three outcome categories (see Supplemental Table S13) or the eight separate outcomes, thus mirroring the findings for the percentage of majority group members (see Supplemental Table S14). For multiculturalism climate, the relationship with motivation was significantly larger for the minority group members than for the majority group members (see Supplemental Table S15). This finding for motivation substantiates the claim that multiculturalism climate specifically serves minorities and their academic functioning (e.g., Chun & Dickson, 2011; Del Toro & Wang, 2021b). Hence, the results of these additional analyses offered further relevant insights into potentially differentiated effects of multiculturalism climate not captured by the moderator analyses for the percentage of majority group members.

Age and Educational Level

No significant effects of age occurred (see Supplemental Table S16). Nevertheless, for intergroup contact theory's optimal contact conditions, we found significantly larger effects in secondary education than in primary education (see Table 8). It has been suggested that the school context—including social cues in school regarding how aspects relating to culture, ethnicity, and race should be dealt with—becomes more important in adolescence when students attend secondary school (e.g., Aldana & Byrd, 2015; Raabe & Beelmann, 2011; Verkuyten & Thijs, 2013). The current findings for optimal contact conditions are aligned with this assumption. No significant moderating effects of educational level were obtained for multiculturalism climate. For the other three approaches, only studies from secondary schools were available, a deficiency that points to important gaps in the current literature and underscores the need for developmentally appropriate studies on colorblind climate, critical consciousness climate, and polyculturalism climate and their links to the outcomes considered herein in younger samples from primary education.

World Region

For intergroup contact theory's optimal contact conditions, in support of our hypotheses, we obtained significantly larger associations with the outcomes for studies from the United States than for European studies (see Table 9). As intergroup contact theory originated in the United States (Allport, 1954), optimal contact conditions may be more consistently implemented in U.S. schools than in Europe, thus explaining the larger effect. Furthermore, significant relationships between intergroup contact theory's optimal contact conditions and the overall outcomes were obtained for all three moderator categories (the United States; Europe; studies from world regions other than the United States and Europe), which further underscores the theory's global influence (see also Pettigrew, 2021). A multiculturalism climate appears to be adaptive in both European and U.S. school contexts, as indicated by its significant associations with the overall outcomes for studies from Europe as well as the United States. Though, descriptively, the effect sizes for multiculturalism climate from U.S.-based studies surpassed those from European studies, the difference was not statistically significant. Similarly, our meta-analysis did not reveal statistically significant differences between studies from the United States versus Europe with regard to colorblind climate or critical consciousness climate. Still, remarkably, the correlation between critical consciousness climate and the overall outcomes was statistically significant for European studies but not for studies from the United States. The concept of critical consciousness stems from Brazil (Freire, 1973, 2000), but the first empirical studies on critical consciousness climate were conducted in the United States (e.g., Byrd, 2017). However, research interest in critical consciousness climate in Europe (especially in Germany) is on the rise (e.g., Juang et al., 2020; Schachner et al., 2021; Schwarzenthal et al., 2022), and it will be interesting to observe future research trends

regarding critical consciousness climate as a relatively recently emerged cultural diversity climate approach. All studies addressing polyculturalism climate stemmed from Europe, impeding our ability to test for differences between world regions.

Source of Information

Source of information significantly moderated the strength of the association between colorblind climate and the overall outcomes, with larger effects for student-rated colorblind climate than for teacher-rated climate (see Supplemental Table S17). Furthermore, the effects for student-rated colorblind climate were statistically significant and positive, whereas teacher-rated colorblind climate exhibited nonsignificant negative near-zero effects. The finding that the relationships for student-rated colorblind climate exceeded those for teacher-rated climate is in accordance with our hypotheses that stronger effects would be found for student-reported cultural diversity climate approaches (e.g., Schwarzenthal et al., 2023). In addition to social desirability, which may lead to a disconnect between what teachers report and their actual behavior in class, teachers who are predominantly ethnic majority members may be less likely than (minority) students to notice subtle cues of a colorblind climate. Nonetheless, the observed pattern may be conflated to some extent by the fact that colorblind climates of the similarities and uniqueness forms have often been assessed from the students' perspective (e.g., Byrd, 2015; Schachner et al., 2021), whereas relatively more studies have used teacher reports to measure the assimilation and ignoring differences forms of a colorblind climate (e.g., Baysu et al., 2021; Schotte et al., 2022).

Source of information did not significantly moderate any effects for multiculturalism climate. Inspecting separate correlations for student- and teacher-reported multiculturalism climate nevertheless revealed that student-rated multiculturalism climate was significantly and positively related to the outcomes, whereas for teacher-rated multiculturalism climate, the effect was nonsignificant and close to zero. One reason could be that measures of teachers' multiculturalism climate may be less conceptually accurate in some instances (e.g., because teachers' multiculturalism beliefs were included in addition to their actual multiculturalism climate practices). It is also possible that teachers may overestimate the prevailing multiculturalism climate. In line with this point, research on other school and class climate constructs has demonstrated that teachers tend to provide more positive ratings than students, that students and teachers often show only weak agreement in their perceptions, and that student ratings have higher predictive validity (see, e.g., Aldrup et al., 2018). For intergroup contact theory's optimal contact conditions, the limited number of studies and effect sizes for teacher-rated contact conditions did not allow us to run moderator analyses, and studies on critical consciousness climate and polyculturalism have relied exclusively on student surveys. Whereas these aspects are unfortunate for the current meta-analysis, they also highlight important gaps in current research on these cultural diversity climate approaches.

Percentage of Female Participants in the Sample

None of the moderator effects for the percentage of female participants were statistically significant, indicating that the gender composition of the included samples did not affect the strengths of the associations between the cultural diversity climate approaches and the outcomes (see Supplemental Table S18). These nonsignificant results for the percentage of female participants are in accordance with findings from another recent meta-analysis that focused on the motivational school or class climate and not on cultural diversity climate approaches (Bardach et al., 2020). Thus, although some studies have shown that female students tend to view school or class climate constructs or teaching practices more positively than male students do (e.g., Fauth et al., 2020; Schwarzenthal et al., 2020), the nature of the relationships between cultural diversity climate and the outcomes does not seem to vary by gender composition.

Level of Analysis

Does the level of analysis (i.e., associations at the school or class level, i.e., group level vs. associations based on individual student ratings) make a difference? According to our nonsignificant results for this moderator, the answer is no (see Supplemental Table S19). Still, we want to draw attention to the fact that intergroup contact theory's optimal contact conditions descriptively showed larger relationships at the school/class level than for individual students (both effects were statistically significant), and multiculturalism climate showed larger effects for individual student correlations (only the individual student correlations were statistically significant, albeit the group-level correlations just failed to reach statistical significance). It may be the case that optimal contact conditions are easier to translate into whole-class or school activities; for example, when a teacher establishes norms of equal status or emphasizes the value of working together to reach common goals. Multiculturalism climate as an identity-conscious approach may be more closely tied to individual subjective interpretations and may consequently unfold larger—but not significantly larger—effects for individual students than on the aggregate group level. Colorblind climate was not significantly related to the outcomes for individual student ratings and school/class level ratings, but critical consciousness climate was. The effects were larger at the group level for both constructs on a descriptive level.

Publication Year

Our meta-analysis revealed that publication year did not have significant effects on the findings (see Supplemental Table S20). This result is positive, as it indicates that research on cultural diversity climate at school does not suffer from "decline effects" (i.e., larger effects in earlier studies and smaller effects in later ones, e.g., Schooler, 2011).

Number of Diversity Climate Approaches and the Role of Contact Conditions

We conducted two additional exploratory moderator analyses. First, the number of cultural diversity climate approaches (one to five) coded for each study did not affect the strengths of the relationships with the outcomes (see Supplemental Table S21). These results may signal that rather than the number of cultural diversity climate approaches, it is the type of approach that matters. In addition, we caution that the number of approaches coded in a study depends a lot on what the researcher deemed important and

included in the questionnaire, and not necessarily on which approaches were represented in a certain school or if all approaches were strongly endorsed.

Second, we compared the effect sizes between (a) studies for which only the relationships between intergroup contact theory's optimal contact conditions and the outcomes were coded and included in the meta-analysis; (b) studies for which, in addition to the relationships between optimal contact conditions and the outcomes, relationships between at least one additional approach and the outcomes were also coded and included in the meta-analysis; and (c) studies for which only relationships between approaches other than optimal contact conditions and the outcomes were coded and included in the meta-analysis (see Supplemental Table S22). Overall, the results further underscored the importance of contact conditions because, for overall outcomes and intergroup outcomes, studies that included only contact conditions yielded larger effects than studies from the other two categories. For academic outcomes, studies that included only contact conditions had statistically significantly larger effect sizes than studies that included other approaches (and not contact conditions), but for socioemotional outcomes, studies that included only contact conditions had statistically significantly larger effect sizes than studies that included contact conditions and at least one additional approach. Nonetheless, in the two categories other than the contact-conditions-only category, colorblind climate, which had the smallest effects in our meta-analysis, may have been included in some cases.

Implications for Theory and Research

This meta-analysis advances understanding by charting parallels and divergences between five cultural diversity climate approaches regarding relationships with outcomes and moderating effects. Four key findings emerged. First, although the different cultural diversity climate approaches are part of the same holistic system within schools, our meta-analysis underlines the value of taking a nuanced look at all the different approaches (see also, e.g., Byrd, 2017; Schachner et al., 2021; Schwarzenthal et al., 2018), as the different cultural diversity climate approaches were differentially related to the outcome variables. For example, intergroup contact theory's optimal contact conditions and multiculturalism climate were most strongly related to socioemotional outcomes. By contrast, critical consciousness was most strongly linked to academic outcomes. Whereas intergroup contact theory's optimal contact conditions showed substantial associations with all intergroup outcomes, multiculturalism climate was related to intergroup attitudes but not to experienced discrimination or cross-group friendships. Thus, the cultural diversity climate "Big Five" investigated herein (i.e., intergroup contact theory's optimal contact conditions, multiculturalism climate, colorblind climate, critical consciousness climate, polyculturalism climate) offer a powerful means of synthesizing correlates with critical outcomes and conceptualizing cultural diversity climate approaches in school.

Second, our meta-analysis advances theory by resolving ambiguities (e.g., regarding the link between multiculturalism climate and experienced discrimination) and readdressing long-standing questions (e.g., regarding the effects of separate contact conditions or the importance of cultural diversity climate approaches for different developmental stages). We established that multiculturalism is not related to discrimination, different contact conditions are equally beneficial, and optimal contact conditions show larger associations with outcomes in secondary than in primary education. Furthermore, we approximated potential differences for minorities versus majorities by examining moderating effects of the percentage of majority group members in the sample and by comparing correlations separately for minority and majority group members. We showed that, overall, optimal contact conditions seem more advantageous in samples with a larger number of minority group members. There were indications that a colorblind climate of the ignoring differences form is especially harmful to minorities and that a multiculturalism climate is more strongly related to the motivation of minority students than majority students.

Third, our meta-analysis constitutes a major step toward achieving greater conceptual clarity in (psychological) research on the cultural diversity climate. Scholars have relied on different terms to describe the same cultural diversity construct or the same terms for distinct constructs, increasing the risk of running into jingle-jangle fallacies. We therefore coded cultural diversity climate measures on the basis of how their content lined up with the respective cultural diversity climate approaches outlined in the psychological literature (e.g., Apfelbaum et al., 2010; Pettigrew & Tropp, 2008; Rosenthal & Levy, 2010) and not based on how they were labeled in the study itself. This approach likely also helped reconcile the mixed findings from prior research. Consider, for example, that terms such as multiculturalism or multicultural practices have been used to refer to a multiculturalism climate in some studies and to optimal contact conditions in other studies. Now recall that our meta-analytic findings showed that optimal contact conditions are related to lower levels of experienced discrimination, whereas a multiculturalism climate is unrelated to experienced discrimination. Thus, conflating these two approaches, which yielded different relationships with discrimination and other outcomes, under the same label (i.e., multiculturalism climate) obscured a differentiated pattern of findings.

Fourth, our meta-analysis points toward current unknowns that can profitably be addressed to build an even stronger science of cultural diversity climate. For example, given the lack of research on critical consciousness climate in elementary school, how do younger children react to the messages conveyed by a critical consciousness climate (but see, e.g., C. S. Brown, 2017), and what are the related intergroup, academic, and socioemotional implications? What would a developmental process model integrating different cultural diversity climate approaches and their effects look like? For instance, might it be the case that establishing intergroup contact theory's optimal contact conditions has more immediate consequences, whereas the effects of other approaches (e.g., multiculturalism climate, critical consciousness climate) take longer to unfold and are at least partially mediated by identity-related processes? How do the different cultural diversity climate approaches reciprocally influence each other and the student outcome variables (e.g., Karataş et al., 2023)? Why exactly are certain cultural diversity climate approaches more strongly related to outcomes in U.S. schools than in European schools? Considering the scarcity of current research on polyculturalism climate, how is polyculturalism climate associated with a variety of outcomes in a variety of educational settings and countries?

Limitations and Directions for Future Research

Despite its important contributions to research on cultural diversity climate in schools, our meta-analysis is not without limitations. For some combinations of cultural diversity climate approaches and outcome variables, and especially for the just recently introduced polyculturalism climate, only a relatively small number of effect sizes, if any, could be synthesized. Even though our meta-analysis is the most comprehensive meta-analytic account of cultural diversity climate in schools to date, it would have been desirable to be able to include more studies for currently underrepresented cultural diversity climate approaches. To do so, more intensified research efforts in conducting primary studies are needed to build a larger body of empirical evidence for specific cultural diversity climate approaches (e.g., polyculturalism climate). Furthermore, we investigated a broad range of outcomes of utmost importance for positive child and youth development in the intergroup, academic, and socioemotional domains. Still, this focus necessarily excludes other important outcomes (e.g., critical reflection and action, Freire, 1973, 2000; Heberle et al., 2020; ethnic–racial identity, Camacho et al., 2018; self-regulated learning, Bardach et al., 2023) that should be targeted in future studies and subsequently included in future research syntheses. Also, to be able to synthesize a sufficient number of studies for each outcome, we relied on broader outcome categories (e.g., prejudice, stereotypes, and various other measures for assessing attitudes toward outgroup members were included in the "intergroup attitudes" category, and different motivational constructs, such as academic interest, self-concept, and self-efficacy, were included in the "motivation" category). Future research that can build on larger numbers of studies should thus include more fine-grained outcome categories on the construct level.

Importantly, our correlation-based meta-analysis does not allow us to make causal claims. This remains a limitation, even though theory suggests that children and adolescent are more likely to be the recipients rather than the agents of cultural diversity climate approaches (e.g., Del Toro & Wang, 2021b). Overall, more interventions and more longitudinal work on cultural diversity climate are warranted, including intensive longitudinal studies (e.g., Yip et al., 2022). Another drawback is that we did not test for more complex mechanisms. For example, cultural diversity climate approaches may predict academic outcomes by fostering a sense of belonging at school (e.g., Celeste et al., 2019; Schachner et al., 2019), and future research syntheses could explore distinct or shared mechanisms for different cultural diversity climate approaches. Also, cultural diversity climate approaches in school settings do not operate in isolation from each other and are instead intermingled (e.g., because educators communicate ambiguous and mixed messages to students or because different cultural diversity climate approaches complement each other and have the most positive effects when they are combined). Future research that systematically explores interactions, latent cultural diversity climate profiles, and transitions between profiles can bring this area of research one step closer to capturing the fuzziness of cultural diversity climate categories in naturalistic educational settings.

An additional limitation is related to the fact that effects of cultural diversity climate likely depend on how cultural diversity climate approaches are implemented, but we could not take this aspect into account due to a lack of respective information in the studies. For instance, some multiculturalism climate implementations may promote diversity by acknowledging and valuing variation as intended, whereas other implementations may involve overemphasizing differences and essentializing groups. We believe that future research should pay close attention to these issues to better understand heterogeneity in its implementations and, relatedly, in the effects of cultural diversity climate approaches.

Moreover, our meta-analysis exclusively focused on the cultural diversity climate in primary and secondary schools, and it can be argued that cultural diversity climate also plays a role in other contexts that were not considered in our work (e.g., university, college, or the workplace). Nonetheless, K-12 education is mandatory and is a context to which children in many societies have almost universal access, whereas access to universities and colleges, for example, is more restricted, and individuals from marginalized minority groups often have a particularly difficult time navigating the narrow pipeline to universities and colleges (e.g., Phalet & Baysu, 2020; Suárez-Orozco et al., 2018). K-12 schools (in addition to other proximal developmental contexts, e.g., the family) lay the foundation for how young people think about and approach diversity (see also Aldana & Byrd, 2015). The school years also fall into the developmental periods of childhood and adolescence, in which individuals gradually move from an initial to a more sophisticated understanding of cultural diversity and in which attempts to reduce negative intergroup attitudes are particularly fruitful (especially in adolescence, e.g., Killen et al., 2022; Raabe & Beelmann, 2011). Hence, whereas it would certainly be valuable to conduct meta-analyses on the cultural diversity climate approaches we investigated here in other contexts (e.g., universities or colleges), we deemed it appropriate to devote our meta-analysis to the school context.

Another limitation is related to the fact that our search for studies was restricted to terms from the English language and that we searched databases that mainly serve Western countries. This approach may have led to a mono-language bias that limits the extent to which our results are generalizable to reports written in other languages (Johnson, 2021). Still, the largest proportion of the studies we included stemmed from Europe and, thus, mostly countries in which English is not the national language (only two of 30 studies from Europe were from Northern Ireland). Furthermore, the results of moderator analyses comparing studies from Europe and the United States showed that the findings generalized across these two world regions, and only optimal contact conditions displayed significantly larger effects in the United States than in Europe.

Finally, although our interest in the cultural diversity climate is an important and worthy one, it captures just one dimension in which diversity operates in school. Future studies and syntheses on diversity climate should expand the scope by, for example, including diversity with respect to gender and sexual orientation, dimensions of mental and physical health, or children's and adolescents' socioeconomic backgrounds, as well as the intersections of these characteristics.

Conclusions

This meta-analysis unpacked different ways in which schools approach and deal with cultural diversity and their associations with outcomes referring to diversity-specific and acculturative tasks

(i.e., intergroup outcomes) and universal developmental tasks (i.e., academic outcomes, socioemotional outcomes; e.g., Coll et al., 1996; Motti-Stefanidi & Masten, 2013; Phalet & Baysu, 2020; Suárez-Orozco et al., 2018; Tropp et al., 2022). Our work brings together both long-established principles from intergroup contact theory's optimal contact conditions and more recently developed approaches and thus comes at an opportune time for further theoretical development and refinement and a more extensive formulation of the cultural diversity climate in school.

To enhance conceptual clarity and coalesce a scattered research landscape, our coding of the cultural diversity climate approaches for each study was based on the psychological literature and not on how the approaches were defined in the study itself. The results show that contact conditions, multiculturalism climate, critical consciousness climate, and polyculturalism climate are positively related to academic and socioemotional outcomes. Contact conditions, in particular, and, to a lesser extent, multiculturalism climate play roles in intergroup outcomes. Colorblind climate was not significantly associated with the outcomes. Overall, our meta-analysis underlines the prominence of optimal contact conditions as the cultural diversity climate approach with the largest and most consistent effects.

We then took a fine-grained look at cultural diversity climate approaches by contrasting effects between different contact conditions and between different forms of multiculturalism climate and colorblind climate, respectively. The lack of significant differences between cultural diversity climate forms for most outcomes adds to the literature (e.g., Paluck et al., 2019). With respect to the findings for contact conditions and multiculturalism climate, we suggest that, in school settings, the different forms may be so strongly entangled that they melt together to produce similar outcomes. With respect to colorblind climate forms, it will be critical to reinvestigate potential differences once a larger number of studies can be meta-analytically integrated.

Importantly, our meta-analysis shed light on potentially differentiated effects for minority and majority group members. We obtained a smaller positive association between optimal contact conditions and the overall outcomes in the presence of a larger percentage of majority group members in the sample. Moreover, the percentage of majority group members moderated effects of colorblind climate of the ignoring differences form on intergroup outcomes and academic outcomes. A multiculturalism climate exhibited larger relationships with the motivation of minority students than majority students (e.g., Apfelbaum et al., 2010; Chun & Dickson, 2011; Del Toro & Wang, 2021b; Leslie et al., 2020; Plaut et al., 2018). These findings contribute to theory and have potential implications for practice as they point to, for example, the importance of multiculturalism climate as a motivational resource for ethnic, racial, and cultural minority students. At the same time, the lack of significant differences for many diversity-climate–outcome combinations highlights that, in our meta-analysis, effects of diversity climate approaches largely held across groups.

A critical interest of psychological research is to ascertain the convergence and divergence of the effects of central constructs across contexts. In our meta-analysis, the magnitude of associations did not differ significantly between the world regions we investigated. Only for contact conditions did the studies from the United States demonstrate significantly larger correlations with the outcomes than the European studies did. More research, especially from world regions other than the United States and Europe, is now needed to diversify diversity climate research and to uncover potential context-specific nuances and universalities.

Another key finding that contributes to developmental theorizing on cultural diversity climate effects concerns the stronger associations between contact conditions and the outcomes in secondary school, as compared with primary school. Furthermore, we found differences that depended on the source of information of the cultural diversity climate measure in that student reports of colorblind climate yielded larger effects than teacher reports. Whereas these findings for source of information may be of interest for the design of future studies (e.g., concerning the decision to use student or teacher ratings, if it is not feasible to collect data from both sources), future research may also want to disentangle assessment- and perspective-specific variations in these effects.

To conclude, our results provide strong arguments for considering the cultural diversity climate in schools. For research and theory, delineating associations between cultural diversity climate approaches and crucial outcomes paves the way for a better understanding of where and to what extent cultural diversity climate may play out in students' lives. From an applied angle, such evidence is key to informing science-based cultural diversity climate practices in schools, thus supporting children's and adolescents' abilities to thrive in and maneuver through diverse environments.

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