



Secondary Publication

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Date of secondary publication: 13.03.2026

Version of Record (Published Version), Article

Persistent identifier: urn:nbn:de:bvb:473-irb-114286x

Primary publication

Paetsch, Jennifer; Timm, Susanne (2026): Pre-service teachers' self-efficacy in handling racist incidents among students : The role of attitudes, anticipated emotions, and learning opportunities, in: Teaching and teacher education : an international journal of research and studies, Amsterdam [u.a.]: Elsevier Science, Vol. 176, No. 105493, pp. 1–13, doi: 10.1016/j.tate.2026.105493.

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Research paper

Pre-service teachers' self-efficacy in handling racist incidents among students: The role of attitudes, anticipated emotions, and learning opportunities

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ARTICLE INFO

Keywords:

Teacher self-efficacy
Pre-service teachers
Learning opportunities
Racist attitudes
Teacher emotions

ABSTRACT

This study aims to identify factors associated with pre-service teachers' self-efficacy in handling racist incidents among students. Specifically, it examined the effects of anti-racist learning opportunities, racist attitudes, and emotional responses to imagined racist incidents on teachers' self-efficacy in a sample of 397 pre-service teachers in Germany. The findings indicate that the perceived quality of anti-racism courses significantly predicts self-efficacy, whereas the quantity of courses attended had no significant effect. Anticipated positive emotions were positively associated with self-efficacy, whereas negative emotions had a detrimental effect. Although no direct significant effects of pre-service teachers' racist attitudes on self-efficacy were found, results suggest there are indirect effects mediated by emotional responses. These findings underscore the importance of both cognitive and affective processes in shaping pre-service teachers' perceived ability to respond to racism among students in classroom settings. We discuss practical implications that can inform and enhance anti-racist practices in teacher education.

1. Introduction

Amid rising anti-immigration protests and racially charged disturbances, questions concerning society's response to racism and cultural tensions have gained heightened prominence in public and political discourse (e.g., Francis, 2025; Pollock et al., 2022). The prevailing assumption in the social sciences has been that overtly racist attitudes have steadily declined in prevalence over time, persisting primarily in covert or socially undesirable forms (Clair & Denis, 2015). However, recent empirical evidence suggests a reversal of this trend, with recent surveys and studies from both Europe and the United States documenting a resurgence of openly expressed racist attitudes (Pew Research Center, 2020; Zick et al., 2023). Political developments and the rise of right-wing populist parties have contributed to significant shifts in the public climate (e.g., Giani & Méon, 2021; Zick et al., 2023).

These broader societal developments are also reflected in educational settings, where students' attitudes toward ethnic and religious minorities mirror the polarized political climate. Prior research documents several ways in which negative attitudes toward immigrants and minorities have become visible. For example, Schulz et al. (2018) report that students in European countries express greater skepticism toward

immigrants and minorities, and survey data from the United States indicate that adolescents report increased exposure to racist content online (Pew Research Center, 2022). In Germany, results from the Shell Youth Studies indicate that a notable minority of young people share heightened concerns about immigration and reservations toward ethnic groups (Albert et al., 2019). Similarly, findings from the most recent German "Mitte-Studie" (Zick et al., 2025) indicate that xenophobic attitudes have been on the rise, particularly among young adults, with 12.5% of 18- to 34-year-olds endorsing xenophobic statements. Moreover, the 2024 race riots in the United Kingdom, which involved widespread adolescent participation, demonstrate that young people will actively engage in racially motivated violence and public disorder when given the chance (Francis, 2025). Taken together, these examples highlight that racism among young people manifests across diverse national contexts, underscoring the global importance of anti-racism education.

As institutions intended to foster democratic engagement and critical reflection, schools are increasingly expected to address these challenges proactively, given recent societal trends indicating that racist attitudes and interactions are becoming more visible within educational settings. Consequently, teachers are confronted with the complex task of

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<https://doi.org/10.1016/j.tate.2026.105493>

Received 30 July 2025; Received in revised form 3 March 2026; Accepted 5 March 2026

Available online 10 March 2026

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responding to racist remarks in the classroom and promoting an environment that supports respectful dialogue (Francis, 2025; Hambacher & Ginn, 2021; Matschiner, 2023). A key question that arises is how teachers approach this responsibility in practice when confronted with expressions of racism by students.

Preventing and addressing racism is a fundamental challenge for teachers, who must navigate socially conditioned racist behaviors and validate students' racial experiences (Ladson-Billings, 2006; Pollock et al., 2010; Salter et al., 2018). This challenge is further heightened by the fact that racism in schools is a multifaceted phenomenon that manifests for example in interpersonal interactions, stereotypes, and issues of unfair treatment (Golden et al., 2024). Research suggests that these complexities are compounded by a lack of institutional clarity and shared pedagogical approach around racism (Pollock et al., 2010). Consequently, equipping (prospective) teachers to tackle racism in educational environments is critical (Hambacher & Ginn, 2021; Matschiner, 2023; for the German context see Massumi & Fereidooni, 2017). However, many teachers report feeling inadequately prepared to address racism in educational settings, indicating a lack of confidence in their ability to implement anti-racist practices effectively (Hollins & Guzman, 2005; Kohli, 2018; Legette et al., 2023).

Developing self-efficacy in handling racism is, therefore, a crucial objective in teacher education (Knowles & Hawkman, 2020). Empirical research further underscores this point, demonstrating that teacher self-efficacy (TSE) is a key determinant of professional behavior, influencing how teachers respond to challenging situations (e.g., Klassen et al., 2011; Zee & Koomen, 2016). TSE could be significantly shaped by teachers' training and the specific learning opportunities they encounter during professional development (Täschner et al., 2024). Based on Social Cognitive Theory (Bandura, 1997), addressing teachers' preparedness to manage racist incidents among students requires considering not only their formal education but also their emotional readiness to confront such issues (Burić et al., 2020; Pfitzner-Eden, 2016; Schlosser & Paetsch, 2023).

Yet, despite the growing visibility of racism in public discourse and its impact on educational settings—where increased polarization, heightened skepticism toward minorities, and greater exposure to racist content also exist among students—empirical research on how teacher education programs systematically prepare future teachers to recognize and address racism among students remains limited (Hambacher & Ginn, 2021). Addressing this gap requires attention to how prospective teachers make sense of racism, as preparation in this area extends beyond the mere provision of knowledge. Emotions seem to play a central role in anti-racist teacher education, as engaging critically with race and racism frequently evokes strong affective responses such as discomfort, defensiveness, or uncertainty (Alvarez & Milner IV, 2018; Hambacher & Ginn, 2021; Matschiner, 2023). However, the relationship between teachers' emotional reactions to racism and their self-efficacy in addressing it has received little empirical attention to date. Thus, this study sought to examine the relationship between the educational experiences provided in teacher training programs explicitly addressing racism, pre-service teachers' racist attitudes, and their self-efficacy in handling racist incidents among students in Germany. Furthermore, this study investigated how pre-service teachers anticipate their emotional reactions to racism-related situations and how these emotional responses are related to their self-efficacy in handling racism.

2. Theoretical framework

2.1. Racism in schools

In Germany, understandings of racism are shaped by the country's historical legacy, particularly the Holocaust, which influences public discourse and often leads to racism being framed narrowly—primarily as the actions of right-wing extremists. As a result, discussions about racism frequently avoid the term itself (Juang et al., 2021). However,

racialized experiences and discriminatory attitudes remain present in German society, even if they are less openly named (German Centre for Integration and Migration Research, 2023). These contextual dynamics make it specifically challenging for educators and schools in Germany to address racism directly, while also underscoring the importance of preparing teachers to recognize and respond to racism.

In the literature, various conceptualizations of racism exist, yet certain core elements have emerged as widely acknowledged points of reference within the social sciences (e.g., Clair & Denis, 2015; Essed, 1991; Miles & Brown, 2003). As outlined in the German National Monitoring of Discrimination and Racism (NaDiRa) studies:

In essence, racism is understood to be an ideology but also a discursive and social practice in which (1) people are divided into different groups on the basis of external features [...] and (2) ascribed generalized, absolute, and unchangeable characteristics based on their "origins" [...], which are (3) evaluated and [...] are associated with social ranks [...], by means of which (4) unequal treatment and social power and dominance structures are reproduced and justified [...] (German Centre for Integration and Migration Research, 2023, pp. 16–17).

According to Critical Race Theory, racism is embedded in societal institutions and reproduced across multiple levels, including the macro (e.g., the structure of the education system), meso (e.g., school type, school-home collaboration), and micro (Clair & Denis, 2015; Ladson-Billings, 2009) levels. This study focuses on the micro level of racism in educational settings, referring to manifestations of bias and discrimination that occur in daily teacher-student or peer interactions (Fu et al., 2024).

A key manifestation of racism at this micro level is racial microaggressions, which are defined as "brief and commonplace daily, verbal, behavioral, and environmental indignities, whether intentional or unintentional, that communicate hostile, derogatory, or negative racial slights and insults to the target person or group" (Sue et al., 2007, p. 271). At this level, racism manifests not only in teacher-student interactions, which are often shaped by implicit biases, but also in interactions among students themselves (Arneback & Englund, 2020). By focusing on peer interaction, the present study addresses a dimension of school life that is particularly relevant against the backdrop of recent societal shifts (Albert et al., 2019; Francis, 2025; Pew Research Center, 2020; Schulz et al., 2018).

Research shows that students from marginalized racial or ethnic backgrounds frequently experience racism through direct verbal insults, racial slurs, microaggressions, and exclusionary behaviors enacted by their peers (Forrest-Bank & Jenson, 2015; Fu et al., 2024; Kohli et al., 2018). These incidents range from explicit derogatory comments and mocking of accents to subtle acts such as questioning a student's belonging or systematically excluding them from group activities (Douglass et al., 2016; Fu et al., 2024). Empirical studies further indicate that such experiences negatively impact students' psychological well-being, sense of belonging, and academic motivation (Benner et al., 2018; Benner & Graham, 2013; Keels et al., 2017; Lui & Quezada, 2019).

Despite their documented consequences, these peer-based forms of racism are often dismissed as harmless jokes or interpersonal conflicts and thus remain unaddressed by teachers and school staff, contributing to their normalization in everyday school life (Fu et al., 2024; Hambacher & Ginn, 2021). Empirical studies have shown that teachers often fail to recognize or adequately address racist peer interactions (Burleigh & Wilson, 2021). It has been argued that this lack of intervention may contribute to the normalization of subtle discriminatory behaviors, reinforcing stereotypes and perpetuating racial biases, potentially fostering a school climate in which such actions are perceived as acceptable (Francis, 2025; Griffin et al., 2017; Wang & Atwal, 2015). Consequently, unaddressed microaggressions could escalate into more overt forms of bullying, particularly when teachers are not sufficiently trained to identify and respond to these behaviors effectively (Burleigh

& Wilson, 2021).

2.2. Addressing racism in teacher education

Teacher education is widely recognized as a crucial area for addressing racism in schools, as it plays a key role in equipping educators to recognize and respond to racial discrimination in educational settings (Francis, 2025; Legette et al., 2023). Matschiner (2023) identified three central arguments underpinning research on (anti-)racism in teacher education: (1) Racism is recognized as a significant phenomenon in both society and schools, (2) teachers' conceptions of racism shape their professional beliefs and practices, and (3) training that explicitly addresses the role of racism in teachers' work is essential for challenging social inequalities. However, despite the growing awareness of the importance of explicitly addressing racism in teacher education, concerns persist that current programs do not adequately prepare future educators for the challenges in schools (Arneback & Jämte, 2021; Francis, 2025; Kohli, 2018). Thus, a growing body of literature emphasizes the importance of addressing racism more explicitly in teacher-preparation programs, rather than focusing solely on broader concepts such as "diversity" or "multicultural education" (Francis, 2025; Hambacher & Ginn, 2021). This call is particularly pertinent in the German context, where discussions of racism are largely suppressed and where the term "race" is widely avoided and not conceptually linked to contemporary social groups (Beck et al., 2023; German Centre for Integration and Migration Research, 2023), which might make it more difficult for teacher educators and (prospective) teachers to engage in meaningful discussions about racism (Juang et al., 2021).

Within justice-oriented teacher education, anti-racist frameworks have been developed to encourage educators to critically engage with the structural foundations of racial injustice in educational contexts (Aronson & Laughter, 2016; Busey et al., 2023; Hosseini et al., 2025). Teacher education often draws on frameworks such as Critical Race Theory to explicitly center racialized power dynamics and structural oppression within educational institutions (Hambacher & Ginn, 2021; Ladson-Billings, 1999; Sleeter, 2017). In teacher preparation, Critical Race Theory-informed approaches often include the use of counter-stories, experiential knowledge, and analyses of educational inequity rooted in historical and legal structures (Hambacher & Ginn, 2021; Ladson-Billings, 1999). Arneback and Jämte (2021) offer a typology of anti-racist actions in education, emphasizing how teachers respond not only to structural forms of racism but also to racism at the individual level. Their work underscores that effective anti-racist practice requires multifaceted approaches grounded in an understanding of racism as both a systemic condition and a set of everyday interactions within school cultures. In line with this distinction, the present study focuses primarily on individual-level racism.

Furthermore, in-service professional development has emerged as an important domain for advancing racial equity among practicing teachers. Matschiner's (2023) systematic review of 64 studies conducted in the United States and published from 1981 to 2019 reveals that American professional development programs explicitly addressing racism aimed to enhance teachers' understanding of the role race plays in education and how their own racial identities shape their interactions with students. They also sought to disrupt established racialized patterns in schools; to support the development and retention of educators committed to racial equity; and to foster shifts in teachers' beliefs and attitudes, such as toward recognizing the importance of anti-racist pedagogy (Matschiner, 2023).

Despite the widespread aspiration of such professional development efforts to foster racial awareness and equity-oriented practice, many teachers report that they do not implement these approaches in their everyday work (Alvarez & Milner IV, 2018; Shelton & Barnes, 2016; Walton et al., 2014). Reasons for this include feeling inadequately prepared to facilitate conversations about race, fearing backlash or conflict, or lacking the practical tools to translate critical reflection into sustained

classroom action (Alvarez & Milner IV, 2018; Hollins & Guzman, 2005; Kohli, 2018; Shelton & Barnes, 2016; Walton et al., 2014).

Institutions involved in teacher education create various opportunities to learn (OTL)—understood as the learning experiences and conditions that are intentionally designed to support specific educational outcomes (Klemenz et al., 2019)—addressing racism in schools (Matschiner, 2023). While providing OTL about race and racism is a necessary condition for fostering anti-racist professional knowledge, the opportunities are not sufficient unless pre-service teachers meaningfully engage with them (Klemenz et al., 2019). Research shows that teacher competencies are significantly influenced by both the quantity and quality of OTL encountered during teacher education (Klemenz et al., 2019). However, this relationship is mediated by the learner's active use of these opportunities, illustrating the crucial role of pre-service teachers' perceptions of their learning environment (Gruber et al., 2010). If students disengage from anti-racist content—for example, because of discomfort, resistance, or lack of relevance—they are unlikely to develop the competences needed to challenge racism in schools. To understand which factors contribute to the development of anti-racist competence among pre-service teachers, this study examines how both the amount and the perceived quality of anti-racist OTL relate to their self-efficacy to respond to racism in educational settings.

2.3. Teachers' racist attitudes

In theoretical conceptualizations of racism, racist attitudes are understood as central mechanisms sustaining racist structures, thus contributing to the continued reproduction of ethnic inequality and discrimination (Clair & Denis, 2015). Racist attitudes are assumed to be shaped by broader societal structures of racial knowledge, which are historically and culturally transmitted understandings that categorize and hierarchize individuals based on perceived racial differences (Goldberg, 2009). At the individual level, racial attitudes emerge from and interact with these broader knowledge structures but can vary significantly between individuals based on personal experiences and socialization processes (Clair & Denis, 2015). Although explicitly racist attitudes have become less socially acceptable in public contexts, there is broad consensus within racism research that racism often persists in more subtle, covert, and indirect forms that are easier to overlook (Bonilla-Silva, 2021; Clair & Denis, 2015). This includes unintentional racism—that is, the notion that racism can appear in seemingly benign forms, such as jokes or compliments, that nonetheless reinforce stereotypes or social hierarchies (German Centre for Integration and Migration Research, 2023).

Defensive reactions to racism are another important aspect of racist attitudes (DiAngelo, 2018). These defensive reactions capture a range of strategies, e.g., denial, minimization, rationalization, avoidance, or reframing of racist realities (DiAngelo, 2018). Francis (2025) suggests an observable tendency in parts of society to downplay or deny the persistence of racism may contribute to the re-emergence of overtly racist discourse, as such denials can obscure structural inequalities and legitimize exclusionary views.

Teachers' racist attitudes may play a crucial role in shaping their anti-racist actions (Blaisdell, 2016; Legette et al., 2023). Since anti-racism involves recognizing how racism operates, it is essential for teachers to acknowledge the racialized nature of society and critically reflect on their own role in sustaining racial inequalities within educational settings (Blaisdell, 2016; Legette et al., 2023). Legette et al. (2023) surveyed 228 teachers in the southern United States using open-ended questions about their recognition of schools as racialized institutions and their own potential complicity in racist practices, finding that 53% of teachers did not acknowledge schools as racialized systems, while 56% denied any personal complicity in reproducing racial inequities. At the same time, 44% of participants did identify instances in which they had engaged in racially biased practices; these included cultural deficit thinking, lack of cultural responsiveness,

racially biased discipline, and reduced teacher effort with students of Color.

In their qualitative study with pre-service English Language Arts teachers, [Shelton and Barnes \(2016\)](#) showed that most participants adopted attitudes that minimized the relevance of racism and deflected responsibility for addressing racial injustice in educational settings. Although they positioned themselves as socially just educators, their discourse often reflected defensive reactions to racism. [Alvarez and Milner IV \(2018\)](#) examined teachers' written responses to open-ended questions about discussing race and racism with their students. While most participants acknowledged the importance of addressing race in the classroom, many simultaneously expressed color-blind or minimizing perspectives. The authors argue that such responses "may implicitly convey the ways in which teachers avoid conversations about race" (p. 390). Furthermore, [Rissanen et al. \(2023\)](#) found a strong association between German and Finish student teachers' diversity beliefs and their orientation toward teaching for social justice. In particular, polyculturalist beliefs were positively related to a willingness to engage in socially just teaching practices. While color-blind attitudes were generally low among participants, qualitative responses revealed that understandings of polyculturalism often remained at a rather superficial level, indicating that a deeper conceptual engagement with diversity may be necessary to support sustained commitment to social justice in education.

The empirical findings indicate that implicit and aversive forms of racism may be present among teachers, potentially hindering the implementation of anti-racism approaches in their practice. Moreover, such beliefs may not only affect classroom practice but also shape teachers' engagement with learning opportunities related to race and equity. Building on this, the present study explores whether teachers' racist attitudes are related to how they perceive and engage with anti-racist OTL in teacher education and to their self-efficacy in handling racist incidents at school.

2.4. Teachers' self-efficacy

TSE refers to teachers' beliefs in their own capabilities to effectively plan, organize, and implement instructional activities ([Tschannen-Moran et al., 1998](#)). Accumulated empirical evidence over the past decades emphasizes the relevance of TSE for both student and teacher outcomes ([Zee & Koomen, 2016](#)).

According to Social Cognitive Theory ([Bandura, 1997](#)), person–environment exchanges offer various forms of information relevant to individuals' perceptions of their own capabilities. Such information includes interpreted mastery experiences, comparative judgments, evaluative feedback from others, and internal cues such as emotional and physiological responses ([Bandura, 1997](#)). Recent syntheses have emphasized that TSE is positively influenced when pre-service teachers experience success during teaching practicums, receive affirming feedback from mentors and peers, or are exposed to exemplary teaching practices by experienced educators ([Morris et al., 2017](#); [Täschner et al., 2024](#)). While empirical studies predominantly focused on external sources of efficacy, investigations of internal contributors to self-efficacy, such as physiological and emotional states, have received comparatively limited attention ([Morris et al., 2017](#)). However, higher levels of TSE have been linked to increased degrees of positive emotions such as joy and pride and reduced degrees of negative emotions such as anger and anxiety (e.g., [Burić et al., 2018](#); [Burić & Frenzel, 2019](#); [Burić & Moè, 2020](#)). Taken together, these results indicate that teachers' emotions may function as antecedents of self-efficacy, with positive emotional experiences enhancing perceived competence and negative emotions diminishing it.

Evidence for the role of emotions in anti-racism teacher training comes from a study by [Stoffers et al. \(2025\)](#), who examined the effects of an anti-racism intervention on teachers' multicultural self-efficacy. They found that participants with higher initial levels of cognitive

reappraisal—a component of emotion regulation—experienced greater improvements in multicultural efficacy, while the number of sessions attended had no measurable impact. These findings suggest that the effectiveness of the intervention depended less on the amount of exposure and more on participants' emotional and cognitive engagement with the content, indicating that anti-racism learning opportunities are used differently depending on individual processing styles.

Many pre-service teachers lack practical experience in dealing with racist incidents in the classroom, making it challenging for them to assess their ability to respond effectively in such situations. Forming self-efficacy beliefs in the absence of direct experience may require imagining oneself in these scenarios and anticipating how one would think, feel, and act. In this process, individuals may mentally simulate the situation and anticipate how they will feel, which can serve as informational cues in judging one's perceived competence ([Baumgartner et al., 2008](#); [Mellers & McGraw, 2001](#)). Anticipated emotions refer to affective states that individuals expect to experience in response to potential future outcomes ([Baumgartner et al., 2008](#); [Mellers & McGraw, 2001](#)). Research suggests that people often use these expected emotional reactions as heuristics when making judgments or decisions ([Baumgartner et al., 2008](#); [Mellers & McGraw, 2001](#)). Applied to the context of racism in schools, imagining a scenario involving racist peer interactions may evoke such anticipated emotions, which in turn influence how confident pre-service teachers feel about managing the situation (cf. [Bandura, 1997](#)).

Recent research on TSE in addressing racism has predominantly focused on culturally responsive pedagogy and the ability to create racially sensitive learning environments (e.g., [Leonard, 2018](#); [Siwatu et al., 2016](#)) rather than their self-efficacy in confronting racism directly, such as addressing discriminatory incidents among students ([Knowles & Hawkman, 2020](#)). [Knowles and Hawkman \(2020\)](#) highlight the importance of explicitly examining anti-racist teaching efficacy in research, arguing that many teachers may feel confident in delivering culturally inclusive content but lack the self-efficacy to engage in explicit anti-racist practices.

To address this gap, the present study moves beyond culturally responsive teaching frameworks by examining how pre-service teachers perceive their ability to intervene in peer-related incidents of racism.

2.5. Research questions and hypotheses

Given the current political climate, it is increasingly likely that teachers will be confronted more frequently and more explicitly with racialized dynamics in their daily practice. However, existing research suggests that many teachers do not feel adequately prepared to engage in anti-racist pedagogy ([Alvarez & Milner IV, 2018](#); [Hollins & Guzman, 2005](#); [Kohli, 2018](#)). To date, most research on anti-racism-related self-efficacy in teacher education has centered on broader constructs such as culturally responsive teaching (e.g., [Leonard, 2018](#); [Siwatu et al., 2016](#)), while less is known about self-efficacy specifically related to addressing racism among students ([Knowles & Hawkman, 2020](#)). Moreover, previous research on the effects of the quantity of OTL in teacher education shows mixed results: While some studies have found that the number of attended courses can contribute to higher levels of competency ([Klemenz et al., 2019](#)), others report no substantial effects ([Paetsch et al., 2023](#); [Stoffers et al., 2025](#)). There is thus a need for more nuanced research that examines factors that may shape teachers' confidence and readiness to act in racially charged classroom situations.

To address this gap, the present study investigates three main research questions.

RQ1: How are anti-racist learning opportunities in teacher education related to pre-service teachers' self-efficacy in handling racist incidents among students?

Drawing on prior research on the sources of TSE ([Morris et al., 2017](#);

Täschner et al., 2024), we formulated the following hypotheses.

- H1: A higher quantity of self-reported anti-racist learning opportunities is positively associated with pre-service teachers' self-efficacy in handling racist incidents among students.
- H2: A higher perceived quality of anti-racist learning opportunities is positively associated with pre-service teachers' self-efficacy in handling racist incidents among students.

RQ2: How is emotional arousal in response to imagined racist incidents associated with pre-service teachers' self-efficacy in handling racist incidents among students?

Building on evidence that emotional experiences are a relevant source of self-efficacy (Burić et al., 2020; Pfitzner-Eden, 2016; Schlosser & Paetsch, 2023), we formulated the following hypotheses.

- H3: Higher levels of anticipated positive emotional arousal in response to hypothetical racist incidents are positively related with pre-service teachers' self-efficacy in handling racist incidents among students.
- H4: Higher levels of anticipated negative emotional arousal in response to hypothetical racist incidents are negatively associated with pre-service teachers' self-efficacy in handling racist incidents among students.

RQ3: How are racist attitudes associated with pre-service teachers' self-efficacy in handling racist incidents among students and their engagement with anti-racist learning opportunities?

Previous research indicates that implicit and aversive forms of racism may persist among teachers (Alvarez & Milner IV, 2018; Legette et al., 2023), potentially influencing how pre-service teachers engage with anti-racist learning content. Based on this, we hypothesize that:

- H5: Higher levels of racist attitudes are negatively associated with pre-service teachers' self-efficacy in handling racist incidents among students.
- H6: Higher levels of racist attitudes are negatively associated with the quantity of anti-racist learning opportunities attended.
- H7: Higher levels of racist attitudes are negatively associated with the perceived quality of anti-racist learning opportunities.

All hypotheses are displayed in Fig. 1.

3. Method

3.1. Procedure and participants

Data were collected through an online questionnaire. Participants were recruited through university mailing lists targeting students enrolled in teacher education programs. Participation in the study was voluntary. Participants were informed about the aims of the study, data-protection measures, and their right to withdraw at any time without consequence, then asked to provide informed consent before proceeding with the survey. A total of 397 pre-service teachers (79% female, 19% male, and 2% non-binary) enrolled at a large public university located in Eastern Germany (with approximately 4600 teacher education students) took part in the study. Of these, 18% were in preparatory service, 39% were pursuing a bachelor's degree, and 44% were enrolled in a master's program. The participants studied various subject combinations and aimed to teach across different school types—specifically, 62.5% intended to work in elementary schools, 21.7% intended to work in high schools/gymnasiums, and 15.9% intended to work in secondary/middle schools. The mean age of the participants was 25 years ($SD = 5.42$). A majority of participants (70%) stated that they had obtained additional teaching experience beyond the compulsory internships required as part of their university teacher education program. The sample's gender distribution aligns with national patterns in Germany, with women representing up to 90% of pre-service teachers depending on the school track (Federal Statistical Office of Germany (Destatis)). With respect to the intended school tracks, the proportion of participants aiming to teach in elementary schools (62.5%) is overrepresented compared to national patterns, where primary-school teaching programs typically account for only about 23–28% of graduates (Federal Statistical Office of Germany (Destatis)).

3.2. Measures

All items were presented in German. An overview of all items translated into English is provided in Supplement 1.

3.2.1. Self-efficacy in handling racist incidents among students

We assessed self-efficacy in handling racism using a questionnaire adapted from Fischer et al. (2017), originally developed for dealing with bullying. This measure includes five items ($\alpha = .80, \Omega = 0.81$) that gauge confidence in intervening against racist remarks or actions among students. Responses were collected using a 4-point Likert scale. An example

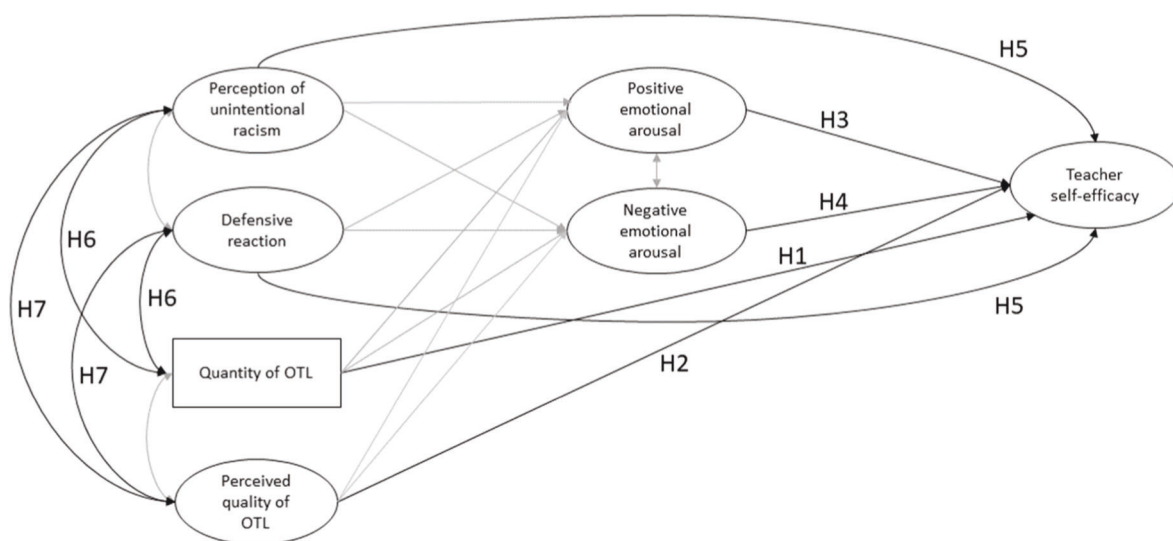


Fig. 1. Theoretical model and study hypotheses.

item is "I feel confident intervening in racist remarks/actions between students myself."

3.2.2. Course quantity

To assess the quantity of exposure to relevant training, participants were asked a single item regarding the number of courses attended that specifically addressed topics related to racism. This was an open-ended question.

3.2.3. Course quality

Course quality was evaluated, focusing on the relevance of content, instructional quality, and support of competence (adapted from Paetsch and Schlosser, 2022). The measure included four items ($\alpha = .83, \Omega = 0.84$), with respondents rating statements such as "The strategies I learned in courses on dealing with racism in schools are useful for my future career as a teacher" on a 4-point Likert scale. The items were presented only to participants who had completed at least one relevant course.

3.2.4. Anticipated emotional arousal

We measured emotional arousal in response to imagined racist incidents using the Positive and Negative Affect Schedule (Breyer & Bluemke, 2016). Participants were presented with an anticipated situation involving racist incidents at school ("Imagine you are a classroom teacher at a school and observe that children in your class repeatedly make racist remarks about another child. Please indicate how you would feel in the situation described above."). Then, they were asked to explain their feelings using a list of 20 adjectives on a 5-point Likert scale ranging from 1 (very slightly or not at all) to 5 (extremely). Because the Positive and Negative Affect Schedule scale was adapted to assess anticipated affect in a specific context, an exploratory factor analysis was conducted to examine its underlying structure. The scree plot suggested a three-factor solution. Following Varimax rotation, the items were interpretable as reflecting (1) positive arousal; (2) negative arousal; and (3) contextually incongruent valence (e.g., proud, excited), which was not relevant to the anticipated situation. Six items with clear primary loadings on the positive arousal factor (active, interested, strong, alert, determined, attentive; $\alpha = .73, \Omega = 0.74$) and five items with clear primary loadings on the negative arousal factor (guilty, ashamed, nervous, upset, anxious; $\alpha = .77, \Omega = 0.78$) were retained for further analysis. Items with cross-loadings or primary loadings on the third factor were excluded.

3.2.5. Racist attitudes

Participants' racist attitudes were assessed using two scales adapted from the DeZIM study (German Centre for Integration and Migration Research, 2023). The first scale, "Perception of unintentional racism" (three items; $\alpha = .66, \Omega = 0.71$), measures awareness of subtle and unintended forms of racism, with higher scores indicating greater awareness (e.g., "People can behave in a racist manner even without intention"). The second scale, "Defensive reaction to criticism of racism" (seven items; $\alpha = .81, \Omega = 0.86$), captures dismissive or defensive attitudes, with higher scores reflecting stronger resistance to racism-related critique (e.g., "Today, you are labeled a racist for every little thing"). Both scales used a 4-point Likert scale.

3.3. Data analysis

Data analysis was performed using IBM SPSS Statistics 26.0 (IBM Corp., 2017) and Mplus 8.7 (Muthén & Muthén, 2012). The proportion of missing data at the item level was minimal (maximum, 0.51%). Values were missing only for the variable course quantity (Table 1). To account for the few missing values, full information maximum likelihood estimation, as implemented in Mplus, was applied. Robust maximum likelihood estimation was used as the most suitable estimation method. Statistical significance was evaluated using an alpha level of 0.05.

To assess construct validity, confirmatory factor analyses (CFAs) were performed using items from the respective scales as indicators of the latent constructs. Structural equation modeling was subsequently applied to examine the relationships specified in the hypothesized model. Additionally, the indirect effects of racist attitudes on self-efficacy in handling racism were investigated by separating the overall association into distinct direct and indirect effects.

Several control variables were included to account for potential differences in participants' professional background and teaching experience. Specifically, we controlled for (a) whether participants were in the teacher-induction phase (preparatory service) or enrolled in a university-based teacher education program, (b) whether they were studying to become primary school teachers, and (c) whether they had additional experience working in schools beyond mandatory university internships. These factors can influence the kinds of learning opportunities available to pre-service teachers. Participants in the induction phase, for example, typically have more extensive practical experience than those still in university programs. Likewise, primary school students may encounter different course structures and classroom contexts than those preparing for secondary levels. Additional school experience

Table 1
Descriptive results, correlations, and reliability coefficients.

	1	2	3	4	5	6	7
1. Self-efficacy in handling racist incidents ^b							
2. Course quantity	0.01						
3. Course quality	0.30**	0.15*					
4. Positive emotional arousal ^c	0.33**	-0.3	0.12				
5. Negative emotional arousal ^c	-0.26**	-0.1	-0.03	0.07			
6. Perception of unintentional racism ^b	0.05	0.12*	0.18**	0.22**	0.09		
7. Defensive reaction to criticism of racism ^b	0.06	0.02	-0.15*	-0.13*	-0.16**	-0.45**	
<i>M</i>	2.91	0.98	2.47	3.49	2.46	3.57	1.94
<i>SD</i>	0.50	1.28	0.75	0.72	0.81	0.49	0.63
Min	1.60	0.00	1.00	1.00	1.00	1.00	1.00
Max	4.00	9.00	4.00	5.00	4.60	4.00	4.00
Cronbach's alpha	0.80	-	0.83	0.73	0.77	0.66	0.81
McDonald's omega (model-based)	0.81	-	0.84	0.74	0.78	0.71	0.86
<i>N</i>	397	395	213 ^a	397	397	397	397
Missing values	-	2	-	-	-	-	-

* $p < .05$; ** $p < .01$.

^a Total of 213 students had attended at least one course and were therefore able to evaluate the quality.

^b 4-point Likert scale.

^c 5-point Likert scale.

beyond mandatory internships may also provide more mastery experiences, which are known to affect self-efficacy.

Several indices were used to evaluate the model. We deployed the root mean square error of approximation (RMSEA), comparative fit index (CFI), Tucker–Lewis index (TLI), and standardized root mean square residual (SRMR). Commonly accepted cutoff criteria were applied to evaluate model fit, with TLI and CFI values above 0.95 indicating excellent fit and values above 0.90 indicating acceptable fit. For RMSEA, values below 0.06 were considered indicative of a good fit, with values below 0.08 suggesting an acceptable fit. Similarly, SRMR values below 0.08 were used as benchmarks for an adequate fit (Hu & Bentler, 1999).

4. Results

4.1. Descriptive results and construct validity of scales

Descriptive statistics and intercorrelations of all study variables are presented in Table 1. On average, participants reported higher levels of positive arousal than negative arousal, with mean scores for positive arousal exceeding and those for negative arousal falling below the midpoint of the respective scales. TSE was, on average, slightly above the midpoint, suggesting a moderate degree of confidence in handling racist incidents among students. Regarding racist attitudes, mean scores indicated relatively high agreement with items reflecting awareness of unintentional racism and low agreement with those representing defensive reactions to criticism of racism. When compared to a representative sample of the German population (German Centre for Integration and Migration Research, 2023), the participating pre-service teachers demonstrated lower levels of racist attitudes. Specifically, agreement with items related to unintentional racism was considerably higher, while endorsement of defensive reaction items was substantially lower than in the general population.

On average, participants reported having attended one university course related to anti-racism, with a maximum of nine courses, indicating that, while opportunities for such learning were available during teacher education, they were used by only part of the student body. A total of 213 students had attended at least one course and were therefore able to evaluate the quality of their OTL. The average quality rating was at the midpoint of the scale, with individual ratings ranging from very low to very high, suggesting substantial variability in the perceived quality of anti-racism education.

For teachers' self-efficacy in handling racism, CFA showed strong factor loadings for all five indicators, ranging from 0.45 to 0.74, suggesting a reliable measurement structure. To improve model fit, a residual covariance between Items 2 and 3 was specified due to their highly similar linguistic structure. Both items begin with the phrase "I believe I can," which may lead to shared method variance not captured by the latent construct (CFI = 0.99, TLI = 0.98, RMSEA = 0.05, SRMR = 0.02). The perceived quality of learning opportunities was modeled as a single latent factor with four observed variables. The standardized factor loadings ranged from 0.62 to 0.84 (CFI = 0.99, TLI = 0.98, RMSEA = 0.06, SRMR = 0.02). A measurement model was estimated to assess anticipated affective responses, with two latent factors: positive emotional arousal (six items) and negative emotional arousal (five items). Standardized factor loadings ranged from 0.38 to 0.82, indicating acceptable to strong associations with their respective latent constructs. To improve model fit, two residual covariances were specified between conceptually similar items based on modification indices (alert and active; strong and attentive), as these item pairs reflect closely related emotional states (CFI = 0.95, TLI = 0.93, RMSEA = 0.06, SRMR = 0.07). Finally, racist attitudes were modeled with two latent factors, perception of unintentional racism (three items) and defensive reaction (six items), with factor loadings ranging from 0.49 to 0.90. Fit indices indicated good model fit (CFI = 0.97, TLI = 0.96, RMSEA = 0.05, SRMR = 0.03).

Across all models, fit indices indicated good model fit, confirming that the measurement structures reliably captured the intended constructs. All factor loadings are presented in Table 2.

4.2. Results of the structural equation modeling

To examine the hypothesized relationships, two structural equation models were specified. This two-model approach became necessary because a substantial portion of the sample had not attended at least one course on racism, necessitating a separate model for analyses involving perceived course quality. In the first model, all variables except the perceived quality of learning opportunities were included, as only those participants who had attended at least one course on racism were able to assess this variable (53.65% of the sample). The second model incorporated perceived quality of learning opportunities, resulting in a reduced sample size (n = 213). Both models demonstrated acceptable fit to the data (Model 1: CFI = 0.93, TLI = 0.92, RMSEA = 0.04, SRMR = 0.06; Model 2: CFI = 0.90, TLI = 0.88, RMSEA = 0.05, SRMR = 0.07).

In the following, we first report the hypotheses tested with the full sample in Model 1, followed by the hypotheses examined in Model 2, which relies on the reduced subsample of participants who had evaluated the quality of learning opportunities. Table 3 summarizes the results in relation to the research questions and specifies for each hypothesis whether it was supported or rejected.

In Model 1 (Fig. 2), no significant relationship was found between the quantity of learning opportunities and pre-service teachers' self-efficacy in handling racism (H1, $\beta = -0.02, p = .809$), indicating that exposure to courses on the topic does not necessarily enhance perceived competence. Thus, hypothesis 1 must be rejected.

Table 2
Factor loadings for the CFA models.

CFA model	Latent variable	Item	Factor loading
Model 1	Self-efficacy in handling racist incidents	1	0.45
		2 ^a	0.64
		3 ^a	0.69
		4	0.74
		5	0.73
Model 2	Course quality	1	0.62
		2	0.81
		3	0.84
		4	0.73
Model 3	Positive emotional arousal	1 ^b	0.38
		2	0.46
		3 ^c	0.47
		4 ^b	0.60
		5	0.62
	Negative emotional arousal	6 ^c	0.82
		1	0.41
		2	0.44
		3	0.72
		4	0.81
Model 4	Perception of unintentional racism	5	0.77
		1	0.90
		2	0.56
	Defensive reaction to criticism of racism	3	0.49
		1	0.75
		2	0.75
		3	0.77
		4	0.60
		5	0.69
		6	0.68

^a As the modification indices indicated a relationship between the errors of items 2 and 3 on the self-efficacy scale, error correlation was permitted. These items were more like each other than like the other items on the scale. Both items begin with the phrase "I believe I can" (see Supplement 1).

^b Two residual covariances were specified on the positive emotion scale between items 1 and 4.

^c As well as between items 3 and 6, as these item pairs reflect closely related emotional states (see Supplement 1).

Table 3
Summary of hypothesis testing.

Hypothesis	Predictor	Outcome	Expected Direction	Result	Supported
<i>RQ1: How are anti-racist learning opportunities in teacher education related to pre-service teachers' self-efficacy in handling racist incidents among students?</i>					
H1	Quantity of OTL	Teacher self-efficacy	positive	$\beta = -0.02, p = .809$	No
H2 ^a	Quality of OTL	Teacher self-efficacy	positive	$\beta = 0.29, p < .001$	Yes
<i>RQ2: How is emotional arousal in response to imagined racist incidents associated with pre-service teachers' self-efficacy in handling racist incidents among students?</i>					
H3	Positive emotional arousal	Teacher self-efficacy	positive	$\beta = 0.41, p < .001$	Yes
H4	Negative emotional arousal	Teacher self-efficacy	negative	$\beta = -0.38, p < .001$	Yes
<i>RQ3: How are racist attitudes associated with pre-service teachers' self-efficacy in handling racist incidents among students and their engagement with anti-racist learning opportunities?</i>					
H5	Racist attitudes: Perception of unintentional racism	Teacher self-efficacy	positive	$\beta = 0.03, p = .725$	No
	Racist attitudes: Defensive Reaction	Teacher self-efficacy	negative	$\beta = 0.14, p = .062$	No
H6	Racist attitudes: Perception of unintentional racism	Quantity of OTL	positive	$\beta = 0.13, p = .018$	Yes
	Racist attitudes: Defensive Reaction	Quantity of OTL	negative	$\beta = 0.03, p = .658$	No
H7 ^a	Racist attitudes: Perception of unintentional racism	Quality of OTL	positive	$\beta = 0.23, p = .004$	Yes
	Racist attitudes: Defensive Reaction	Quality of OTL	negative	$\beta = -0.20, p = .012$	Yes

^a Model 2.

Positive emotional arousal in response to imagined racist incidents was positively associated with self-efficacy (H3, $\beta = 0.41, p < .001$), whereas negative emotional arousal showed a significant negative relationship (H4, $\beta = -0.38, p < .001$). Thus, hypotheses 3 and 4 can be accepted. Hypothesis 5 posited a negative relationship between teachers' racist attitudes and self-efficacy in handling racist incidents among students. The results do not support this hypothesis, because there were

no significant effects of unintentional racism on self-efficacy ($\beta = 0.03, p = .725$) or of defensive reaction on self-efficacy ($\beta = 0.14, p = .062$).

For results indicating an indirect pathway from attitudes on TSE via emotional arousal, indirect effects were estimated (Table 4). Analyses revealed a positive indirect effect of perception of unintentional racism on TSE, mediated by positive emotional arousal (indirect effect = 0.14; $p = .002$).

Hypothesis 6 posited a negative relationship between racist attitudes and the quantity of learning opportunities. As expected, the perception of unintentional racism was significantly positively associated with the quantity of learning opportunities (H6, $\beta = 0.13, p = .018$), illustrating that pre-service teachers with increased perceptions of unintentional racism attended more courses addressing topics related to racism. Given that lower scores on this scale reflect higher levels of racist attitudes, the positive association aligns with the hypothesized negative relationship. However, there was no relationship between defensive reaction and the quantity of OTL (H6, $\beta = 0.03, p = .658$). Thus, hypothesis 6 is only partially accepted.

Furthermore, results showed a significant relation between perception of unintentional racism and positive emotional arousal ($\beta = 0.33, p < .001$), illustrating that pre-service teachers with higher perceptions of

Table 4
Standardized direct, indirect, and total effects on self-efficacy in handling racist incidents among students.

Predictor		Effect on self-efficacy		
		Coefficient (p-value)	95% confidence interval ^a	
			Lower 2.5%	Upper 2.5%
Perception of unintentional racism	Direct	0.03 (0.725)	-0.16	0.24
	Indirect 1	-0.01 (0.751)	-0.11	0.06
	Indirect 2	0.14 (0.002)	0.07	0.27
	Total	0.16 (0.110)	-0.06	0.37
Defensive reaction to criticism of racism	Direct	0.14 (0.062)	-0.02	0.29
	Indirect 1	0.04 (0.228)	-0.03	0.12
	Indirect 2	0.02 (0.683)	-0.06	0.09
	Total	0.20 (0.019)	0.00	0.38

^a 95% bias-corrected bootstrap confidence interval using 500 resamples. Analyses controlled for professional phase, school track, and additional school experience; effects of the control variables are shown in Supplement 2. Indirect 1 refers to the indirect effect via negative emotional arousal; indirect 2 refers to the indirect effect via positive emotional arousal.

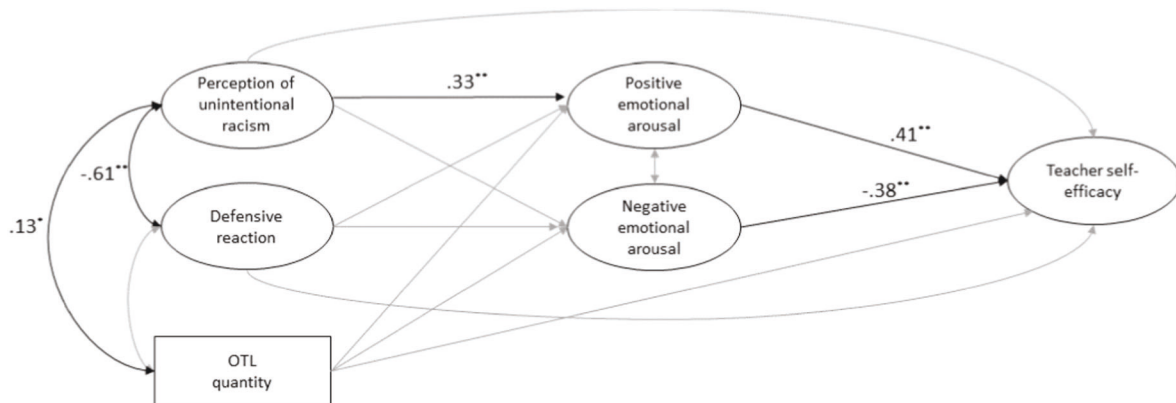


Fig. 2. Structural equation model 1 ($N = 397$). Latent variables are represented as ovals. Observed variables are depicted as rectangles. The figure exhibits all the paths. Non-significant paths are displayed in grey. Indirect effects are shown in Table 3. Analyses were controlled for professional phase, school track, and additional school experience. Factor loadings and regression paths are reported in Supplemental 2. * $p < .05$; ** $p < .01$.

unintentional racism had greater positive emotional responses to the anticipated situation. There was no significant relationship between defensive reaction and positive ($\beta = 0.04, p = .682$) or negative emotional arousal ($\beta = -0.12, p = .232$). A negative correlation was found between the two latent attitude factors ($\beta = -0.61, p < .001$), suggesting that greater recognition of unintentional racism is associated with reduced defensive responses to criticism of racism. No significant effects were found for the control variables, including preparatory service, primary school track, and additional teaching practice. Factor loadings and regression paths for model 1 are reported in Supplemental 2.

In Hypothesis 2, a significant positive effect from the perceived quality of OTL on self-efficacy in handling racist incidents among students was expected. In Model 2 (Fig. 3), perceived quality of OTL was included additionally; thus, the analysis was based only on those 213 students who had attended at least one course on the topic “racism.” A significant positive relationship was found between perceived quality of OTL and self-efficacy ($H2, \beta = 0.29, p < .001$). Thus, hypothesis 2 can be accepted.

Hypothesis 7 posited a negative relationship between racist attitudes and the perceived quality of learning opportunities attended. Model 2 shows that the perceived quality of OTL was positively associated with the perception of unintentional racism ($\beta = 0.23, p = .004$) and negatively associated with defensive reactions to racism-related critique ($\beta = -0.20, p = .012$), illustrating that pre-service teachers with stronger racist attitudes evaluated courses addressing topics related to racism less positively. Thus, hypothesis 7 is accepted. Overall, the patterns of associations identified in Model 1 were largely replicated in Model 2, despite the smaller sample size. An exception to this pattern emerged in the relationship between defensive reaction and OTL quantity: A significant positive association was found ($\beta = 0.14, p = .022$), indicating that, among participants who had attended at least one course, those with higher levels of defensive reactions reported having completed more courses on the topic. This finding runs counter to our expectations (H6). Moreover, a positive correlation was found between the perceived quality and the quantity of OTL ($\beta = 0.14, p = .037$), suggesting that students who attended more learning opportunities also tended to evaluate them more positively. Factor loadings and regression paths for model 2 are reported in Supplemental 2.

5. Discussion

Driven by the increasing salience of racism in society and

educational contexts (Francis, 2025; Zick et al., 2023), the present study investigated whether and how pre-service teachers’ attitudes, emotions, and perceived learning opportunities are associated with their self-efficacy in handling racist incidents among students in schools. This study contributes to ongoing efforts to understand how teacher education can support the development of anti-racist professional competence, particularly in light of the challenges posed by political polarization and the rise of right-wing populism (cf. Francis, 2025). In line with recent developments in the field, this study also contributes to emerging critical quantitative approaches that seek to complement qualitative insights with theory-driven quantitative research (Sablan, 2019).

5.1. The role of anti-racism OTL for pre-service teachers’ self-efficacy in handling racist incidents among students

In this study, OTL was assessed based on the number of racism-related courses participants had attended and their subjective evaluations of course quality. While the course quantity showed no significant association with TSE, quality ratings were significantly related to TSE. Specifically, among those participants who had attended at least one relevant course, pre-service teachers who rated the course quality more positively reported higher levels of self-efficacy in dealing with racist incidents among students. This finding indicates that the perceived quality of anti-racism training in teacher education may be more closely associated with pre-service teachers’ confidence in addressing racism than the sheer quantity of training experiences. These results are consistent with previous research indicating that the quantity of topic-related OTL does not significantly predict pre-service teachers’ multicultural beliefs (Paetsch et al., 2023). Similarly, Stoffers et al. (2025) found that the number of sessions attended in an anti-racism intervention did not significantly predict pre-post changes in teachers’ self-efficacy.

Notably, approximately 50% of participants in our sample reported that they had not attended any course addressing racism during their university teacher education. This result echoes prior research showing that many teachers feel insufficiently prepared to discuss race in the classroom or to implement anti-racist pedagogical approaches (Alvarez & Milner IV, 2018; Kohli, 2018; Shelton & Barnes, 2016). Furthermore, these findings support the assumption that teacher education programs tend to emphasize broader concepts such as diversity or multicultural education, while addressing racism more explicitly remains less common (Francis, 2025; Hambacher & Ginn, 2021). However, our findings

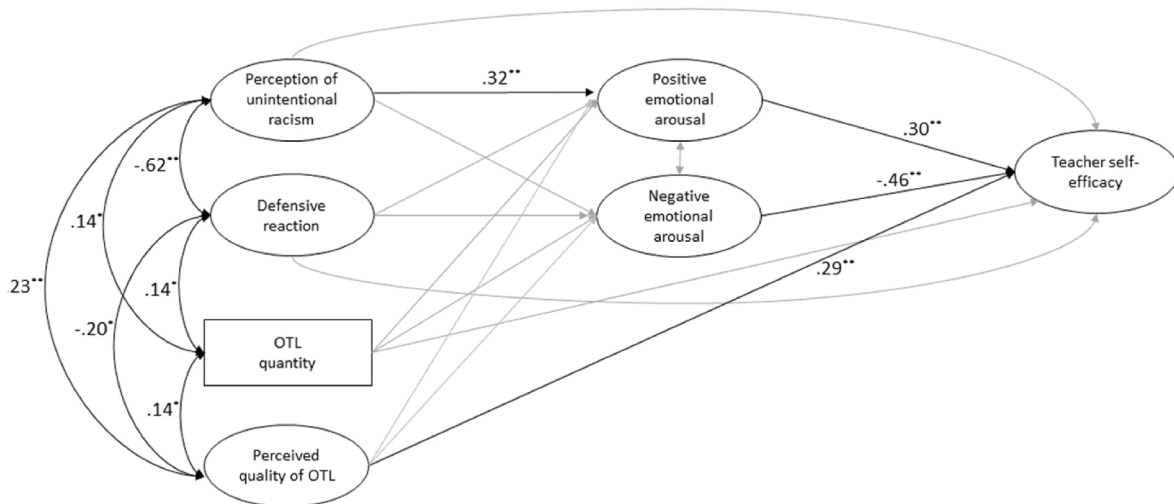


Fig. 3. Structural equation model 2 (n = 213). Latent variables are represented as ovals. Observed variables are depicted as rectangles. The figure exhibits all the paths. Non-significant paths are displayed in grey. Analyses were controlled for professional phase, school track, and additional school experience. Factor loadings and regression paths are reported in Supplemental 2. *p < .05; **p < .01.

do not reflect a representative assessment of anti-racism course offerings in German teacher education programs and should therefore be interpreted with caution in terms of generalizability.

5.2. Relations between anticipated emotions and pre-service teachers' self-efficacy in handling racist incidents among students

Based on Social Cognitive Theory (Bandura, 1997), we hypothesized that emotional responses to imagined racist incidents are related to pre-service teachers' self-efficacy in handling racist incidents among students. We assessed positive and negative emotional arousal by presenting a hypothetical scenario in which participants were asked to imagine being a teacher at a school, observing racist remarks among students, and then to indicate how they would feel. In line with our expectations, we found a significant positive effect for positive emotions and a significant negative effect for negative emotions on pre-service teachers' self-efficacy, indicating that teachers who experienced higher levels of positive emotional arousal also reported higher levels of TSE, while the opposite pattern was true for negative emotional arousal. We argue that assessing one's self-efficacy in handling racist incidents requires imagining oneself in such situations, a process that may evoke anticipated emotions (Baumgartner et al., 2008; Mellers & McGraw, 2001). These emotional reactions can, in turn, serve as informational cues that influence how competent teachers perceive themselves to be in managing these scenarios (Bandura, 1997). Our results suggest that teachers who feel nervous or anxious may view these emotions as indicative of a lack of competence, potentially undermining their perceived self-efficacy. In contrast, feelings of curiosity and positive activation may be perceived as a sign of confidence and mastery and, consequently, enhance TSE.

These findings align with prior research that found positive relationships between teachers' positive emotions and TSE and negative relationships between negative emotions and TSE (Burić et al., 2020; Burić & Frenzel, 2019; Burić & Moè, 2020). Contrary to previous studies, we measured emotions triggered by imagined situations rather than by real experiences, as racist incidents are not everyday occurrences and not all teachers are confronted with them. Our results reflect cross-sectional relationships; therefore, the direction of the effects remains unclear. It is possible that reciprocal relationships exist between teachers' emotions and their self-efficacy. For instance, a longitudinal study by Burić et al. (2020) found that, while current levels of negative emotions negatively predicted future TSE, higher TSE levels positively predicted future positive emotions. Moreover, previous research has demonstrated that positive affect can contribute to the development of TSE over time (Burić & Moè, 2020). In the present study, it is conceivable that higher levels of self-efficacy enhanced individuals' perceived coping capacity for the imagined situation involving racist peer interactions, which in turn may have reduced anticipated negative emotional responses and supported more confident emotional appraisal (cf. Burić et al., 2020).

5.3. Effects of racist attitudes on pre-service teachers' self-efficacy in handling racist incidents among students and OTL

Contrary to our expectations, we did not find direct effects of pre-service teachers' racist attitudes on their self-efficacy in handling racist incidents among students. Instead, a positive indirect effect emerged: Awareness of unintentional racism was associated with higher TSE, mediated by positive emotional arousal. This suggests that recognizing subtle and unintentional forms of racism may activate constructive emotional responses, which are in turn linked to pre-service teachers' confidence in managing such situations. One possible explanation for the absence of direct effects is that racist attitudes may influence actual teaching behavior rather than self-efficacy beliefs. Prior studies have linked teachers' attitudes and beliefs to behavioral constructs, such as perceived responsibility for addressing racial injustice (Shelton and

Barnes, 2016) or willingness to implement socially just teaching practices (Rissanen et al., 2023), rather than to self-efficacy. Another potential explanation is the overall low level of racist attitudes reported by participants in this study, which likely reduced variance and may have limited the ability to detect direct effects. A comparison with data from a representative national survey (German Centre for Integration and Migration Research, 2023) confirmed that participants in this sample expressed markedly lower agreement with racist attitude items. This may be partly attributable to self-selection effects, as individuals with greater sensitivity to racism may have been more likely to participate in our study. It is also possible that teachers in Germany, in general, hold less explicitly racist attitudes than the general population. This interpretation aligns with empirical findings, which reported that teachers in Germany tend to hold more liberal attitudes than the overall population (Berliner Institut für empirische Integrations- und Migrationsforschung, 2017).

In line with our expectations, we found significant associations between racist attitudes and both the quantity and perceived quality of OTL. Specifically, pre-service teachers who were more aware of subtle forms of racism had attended a greater number of courses and evaluated courses addressing topics related to racism more positively, whereas pre-service teachers who expressed higher defensive reactions to racism-related critique evaluated courses addressing topics related to racism less positively. One possible explanation for these findings is that pre-service teachers can self-select into courses that align with their existing interests and beliefs. This interpretation is supported by previous research demonstrating self-selection effects in educational contexts (e.g., Paetsch et al., 2023). Another explanation may be that high-quality courses provide meaningful opportunities for critical self-reflection, which can enhance pre-service teachers' sensitivity to subtle forms of racism and reduce defensive responses to critiques of racism. This interpretation is consistent with prior studies showing that interventions can positively influence teachers' multicultural beliefs and attitudes (e.g., Civitillo et al., 2018; Pevec-Zimmer et al., 2024; Ulbricht et al., 2024). However, contrary to our expectations, among participants who had attended at least one course, those with higher levels of defensive reactions reported having completed a greater number of courses. Possible explanations might be that individuals who react defensively when confronted with anti-racist content may actively seek out additional courses to reduce uncertainty, and that defensive reactions may only become salient once individuals are exposed to such content in the first place.

5.4. Limitations and future research

Our study's cross-sectional design does not allow for causal interpretations of the observed relationships; for example, the effects of anticipated emotions and perceived quality of OTL on TSE could plausibly be interpreted in both directions. To determine the directionality of these effects, longitudinal data and experimental intervention studies are required; as one example, future research could investigate whether targeted anti-racism interventions lead to increased TSE and to what extent this effect is mediated by the perceived quality of learning conditions or positive emotions.

In addition, the measurement of racist attitudes, emotional responses, and perceived quality of learning opportunities relied on self-report instruments, which may be subject to social desirability bias and limited introspective accuracy. Future research should examine whether the findings hold when using alternative assessment methods, such as implicit measures of attitudes (Greenwald et al., 2002) or physiological indicators of emotional responses (Wuensch et al., 2025). Additionally, future work should examine which specific features of anti-racism courses pre-service teachers associate with high-quality learning opportunities. Moreover, the present study focused on pre-service teachers' self-efficacy beliefs rather than their actual behavior in classroom settings. While TSE is an important predictor of

professional action (e.g., Klassen et al., 2011; Zee & Koomen, 2016), it does not necessarily translate into effective behavior when faced with real-life incidents. Future research should therefore incorporate classroom observations or situational simulations to investigate how self-efficacy in handling racist incidents relates to teachers' concrete responses in practice.

The operationalization of OTL was also relatively broad and did not capture the content or pedagogical design of specific anti-racist interventions. Information on the objective availability and structure of OTL was not collected, nor was data gathered from participants who had not attended any relevant course, limiting the generalizability of the findings. Furthermore, the relatively small sample size for subgroups of students who attended at least one course on the topic may reduce the statistical power of the analyses in Model 2 and the robustness of findings.

Another potential limitation pertains to the sampling procedure, as the study included only students from a single university. As a result, the variance in experienced OTL is likely limited by the specific institutional context. Moreover, the generalizability of the findings to other student populations is restricted. Additionally, we were not able to differentiate between participants from majoritized and minoritized heritage cultural groups or between those with and without personal experiences of racism. Such distinctions may be relevant, as students' own positionalities and experiences could shape both their perceptions of racism and their engagement with anti-racism-related learning opportunities. A clear goal for future research in this area should be to replicate and extend these findings with a larger and more diverse sample, encompassing students from different universities and educational contexts.

As our study primarily focused on individual-level manifestations of racism, future research should also examine structural dimensions of racism to advance a more comprehensive understanding of, and approach to, anti-racist practice in education (Arneback & Jämte, 2021).

5.5. Implications for teacher education

Our results yield several implications for supporting pre-service teachers' self-efficacy in handling racist incidents among students. The low number of anti-racism courses attended by pre-service teachers in our sample highlights the need for a more systematic and comprehensive integration of anti-racist education within German teacher education programs. As Beck et al. (2023) argued, a cross-curricular implementation of racism-critical education has yet to be established in Germany's teacher education system. Similarly, Francis (2025) emphasizes the importance of professional development for both pre-service and in-service teachers, stating that it "should aim to equip all of them with the skills needed to respond to and combat racism in schools effectively" (p. 7). These findings and perspectives collectively point to the urgent need to move beyond optional or isolated training modules toward structurally embedded approaches to anti-racism in teacher education.

The finding that both the perceived quality of university-based OTL and pre-service teachers' anticipated emotions are associated with self-efficacy underscores the importance of student-centered training on anti-racism in teacher education. Interventions should go beyond the transmission of knowledge to actively engage pre-service teachers in critically examining their own positioning, emotional responses, and professional responsibilities. Arneback and Englund (2020) emphasize that teachers should reflect on multiple dimensions when responding to student expressions of racism, including individual students' potential for growth, the classroom climate, and their own knowledge and prior experiences. They argue that teachers' prior experiences may shape emotional responses, which in turn can influence teachers' openness to deliberative and dialogic communication in the classroom. At the individual level, teachers' own experiences with racism may affect how they perceive and evaluate racist incidents and whether they feel ready and able to act against racism in educational contexts. Acknowledging and working through these dimensions seems to offer a valuable entry point

for more affectively oriented approaches to anti-racist teacher education, in which emotions and prior experiences are explicitly integrated into learning processes. To support this process, teacher education programs could incorporate activities that encourage reflection and discussion of authentic, practice-based cases. For instance, Hambacher and Ginn (2021) identify a range of approaches that can foster critical awareness of teachers' racialized perspectives, including autobiographical writing, race-reflective journaling, and media analysis. Such methods might help pre-service teachers better understand the interplay between their social positioning, emotional engagement, and professional agency in confronting racism in the classroom.

Given the observed relationship between pre-service teachers' racist attitudes and both their participation in and perception of the quality of OTL in our study, it appears essential for teacher education institutions to implement varied program formats that proactively address resistance and facilitate attitude change. Furthermore, teacher educators should be attentive to the racialized dispositions and prior experiences of their students and adopt pedagogical strategies that guide them toward culturally responsive and anti-racist beliefs and practices (cf. Knowles & Hawkman, 2020). Our results may also be partially explained by self-selection processes, whereby students with greater interest in anti-racism are more likely to engage with relevant content and perceive it as meaningful. To counteract this, institutions should consider how curricula can be designed to reach a broader range of students—including those who might not voluntarily engage—by, for example, embedding anti-racism education into mandatory coursework and linking it to examination requirements or core professional competencies.

6. Conclusions

This study examined predictors of pre-service teachers' self-efficacy in handling racist incidents among students, with a particular focus on teachers' racist attitudes, emotional responses, and OTL within teacher education programs. The findings demonstrate that anticipated emotions are significantly associated with self-efficacy beliefs. Accordingly, anti-racism teacher education may benefit from explicitly addressing emotional experiences. Furthermore, the absence of a significant association between self-efficacy and the number of attended anti-racism courses indicates that simply increasing the quantity of training may not suffice. Instead, our results underscore the importance of designing student-oriented learning experiences characterized by meaningful content, high instructional quality, and targeted support.

Overall, our findings highlight the need for teacher education programs that combine cognitive and emotional dimensions to build the readiness necessary for confronting racism and fostering equity in educational settings.

CRedit authorship contribution statement

Jennifer Paetsch: Writing – review & editing, Writing – original draft, Formal analysis, Data curation, Conceptualization. **Susanne Timm:** Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.tate.2026.105493>.

Data availability

Data will be made available on request.

References

- Albert, M., Hurrelmann, K., Quenzel, G., & Schneekloth, U. (2019). Die 18. Shell Jugendstudie - Eine Generation meldet sich zu Wort [The 18th Shell Youth Study: A generation speaks up]. *Diskurs Kindheits- und Jugendforschung*, 14(4), 484–490. <https://doi.org/10.3224/diskurs.v14i4.06>
- Alvarez, A., & Milner IV, H. R. (2018). Exploring teachers' beliefs and feelings about race and police violence. *Teaching Education*, 29(4), 383–394. <https://doi.org/10.1080/10476210.2018.1512091>
- Arnebeck, E., & Englund, T. (2020). Teachers' deliberation on communicative potentials in classrooms when students express racism. *Reflective Practice*, 21(1), 28–40. <https://doi.org/10.1080/14623943.2019.1708304>
- Arnebeck, E., & Jämte, J. (2021). How to counteract racism in education – A typology of teachers' anti-racist actions. *Race, Ethnicity and Education*, 25(2), 192–211. <https://doi.org/10.1080/10.1080/13613324.2021.1890566>
- Aronson, B., & Laughter, J. (2016). The theory and practice of culturally relevant education: A synthesis of research across content areas. *Review of Educational Research*, 86(1), 163–206. <https://doi.org/10.3102/0034654315582066>
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. W.H. Freeman.
- Baumgartner, H., Pieters, R., & Bagozzi, R. P. (2008). Future-oriented emotions: Conceptualization and behavioral effects. *European Journal of Social Psychology*, 38(4), 685–696. <https://doi.org/10.1002/ejsp.467>
- Beck, A., Thielen, M., & Thönneßen, N.-M. (2023). Rassismuskritische Perspektiven für die Lehrkräftebildung [Anti-racist perspectives for teacher education]. *HLZ – Herausforderung Lehrer*innenbildung*, 6(1), 472. <https://doi.org/10.11576/hlz-6649>
- Benner, A. D., & Graham, S. (2013). The antecedents and consequences of racial/ethnic discrimination during adolescence: Does the source of discrimination matter? *Developmental Psychology*, 49(8), 1602–1613. <https://doi.org/10.1037/a0030557>
- Benner, A. D., Wang, Y., Shen, Y., Boyle, A. E., Polk, R., & Cheng, Y.-P. (2018). Racial/ethnic discrimination and well-being during adolescence: A meta-analytic review. *American Psychologist*, 73(7), 855–883. <https://doi.org/10.1037/amp000204>
- Berliner Institut für empirische Integrations- und Migrationsforschung (BIM)/ Forschungsbereich beim Sachverständigenrat deutscher Stiftungen für Integration und Migration (SVR-Forschungsbereich). (2017). *Vielfalt im Klassenzimmer. Wie Lehrkräfte gute Leistung fördern können [Diversity in the classroom. How teachers can encourage good performance]*. Berlin.
- Blaisdell, B. (2016). Schools as racial spaces: Understanding and resisting structural racism. *International Journal of Qualitative Studies in Education*, 29(2), 248e272. <https://doi.org/10.1080/09518398.2015.1023228>
- Bonilla-Silva, E. (2021). *Racism without racists: Color-blind racism and the persistence of racial inequality in America* (6th ed.). Rowman & Littlefield.
- Breyer, B., & Bluemke, M. (2016). Deutsche Version der Positive and Negative Affect Schedule PANAS (GESIS Panel) [The German version of the Positive and Negative Affect Schedule PANAS (GESIS Panel)]. *Zusammenstellung sozialwissenschaftlicher Items und Skalen (ZIS)*. <https://doi.org/10.6102/ZIS242>
- Burić, I., & Frenzel, A. C. (2019). Teacher anger: New empirical insights using a multi-method approach. *Teaching and Teacher Education*, 86, Article 102895. <https://doi.org/10.1016/j.tate.2019.102895>
- Burić, I., & Moè, A. (2020). What makes teachers enthusiastic: The interplay of positive affect, self-efficacy and job satisfaction. *Teaching and Teacher Education*, 89, Article 103008. <https://doi.org/10.1016/j.tate.2019.103008>
- Burić, I., Slišković, A., & Macuka, I. (2018). A mixed-method approach to the assessment of teachers' emotions: Development and validation of the teacher emotion questionnaire. *Educational Psychology*, 38(3), 325–349. <https://doi.org/10.1080/01443410.2017.1382682>
- Burić, I., Slišković, A., & Sorić, I. (2020). Teachers' emotions and self-efficacy: A test of reciprocal relations. *Frontiers in Psychology*, 11, 1650. <https://doi.org/10.3389/fpsyg.2020.01650>
- Burleigh, C. L., & Wilson, A. M. (2021). Teachers' awareness in identifying microaggressive behaviors within the K-12 classroom. *Social Psychology of Education*, 24(1), 143–167. <https://doi.org/10.1007/s11218-020-09604-9>
- Busey, C. L., Duncan, K. E., & Dowie-Chin, T. (2023). Critical What What? A theoretical systematic review of 15 years of critical race theory research in social studies education, 2004–2019. *Review of Educational Research*, 93(3), 412–453. <https://doi.org/10.3102/00346543221105551>
- Civittillo, S., Juang, L. P., & Schachner, M. K. (2018). Challenging beliefs about cultural diversity in education: A synthesis and critical review of trainings with pre-service teachers. *Educational Research Review*, 24, 67–83. <https://doi.org/10.1016/j.edurev.2018.01.003>
- Clair, M., & Denis, J. S. (2015). Sociology of racism. In J. D. Wright (Ed.), *International encyclopedia of the social & behavioral sciences* (pp. 857–863). Elsevier. <https://doi.org/10.1016/B978-0-08-097086-8.32122-5>
- DiAngelo, R. (2018). *White fragility: Why it's so hard for white people to talk about racism*. Beacon Press.
- Douglass, S., Mirpuri, S., English, D., & Yip, T. (2016). “They were just making jokes”: Ethnic/racial teasing and discrimination among adolescents. *Cultural Diversity and Ethnic Minority Psychology*, 22(1), 69–82. <https://doi.org/10.1037/cdp0000041>
- Essed, P. (1991). *Understanding everyday racism: An interdisciplinary theory*. SAGE Publications, Inc. <https://doi.org/10.4135/9781483345239>
- Federal Statistical Office of Germany (Destatis). Students at higher education institutions: Germany, years [Data set]. GENESIS-Online database. Retrieved March 6, 2026, from <https://www-genesis.destatis.de/datenbank/online/statistic/21311/details>.
- Fischer, S. M., Ulbricht, J., & Bilz, L. (2017). Skala zur Erfassung der mobbingbezogenen Selbstwirksamkeitserwartung von Lehrkräften (MOB-SWK) [Scale for measuring the bullying-related self-efficacy expectations of teachers (MOB-SWK)]. *Zusammenstellung sozialwissenschaftlicher Items und Skalen (ZIS)*. <https://doi.org/10.6102/ZIS251>
- Forrest-Bank, S., & Jenson, J. (2015). Differences in experiences of racial and ethnic microaggression among Asian, latino/hispanic, black, and white young adults. *Journal of Sociology & Social Welfare*, 42(1), 141–161. <https://doi.org/10.15453/0191-5096.3891>
- Francis, D. A. (2025). “Nae problem here”: Troubling race and racism in Scottish education. *Teaching and Teacher Education*, 164, Article 105092. <https://doi.org/10.1016/j.tate.2025.105092>
- Fu, R., Leff, S. S., Carroll, I. C., Brizzolara-Dove, S., & Campbell, K. (2024). Racial microaggressions and anti-racism: A review of the literature with implications for school-based interventions and school psychologists. *School Psychology Review*, 53(1), 1–16. <https://doi.org/10.1080/2372966X.2022.2128601>
- German Centre for Integration and Migration Research (DeZIM). (2023). *Racist realities: How does Germany deal with racism? Preliminary study for the German national monitoring of discrimination and racism (NaDiRa)*. Deutsches Zentrum für Integrations- und Migrationsforschung (DeZIM).
- Giani, M., & Méon, P.-G. (2021). Global racist contagion following donald trump's election. *British Journal of Political Science*, 51(3), 1332–1339. <https://doi.org/10.1017/S0007123419000449>
- Goldberg, D. T. (2009). Racial knowledge. In L. Back, & J. Solomos (Eds.), *Theories of race and racism* (2nd ed., pp. 226–256). Routledge. <https://doi.org/10.4324/9781003060802-18>
- Golden, A. R., Gale, A., Griffin, C. B., Knox, J., & Bland, J. J. (2024). School racial climate and the racialized experiences of racially minoritized youth in schools: What we know and where to go. *Review of Educational Research*, 95(6), 1379–1413. <https://doi.org/10.3102/00346543241290508>
- Greenwald, A. G., Banaji, M. R., Rudman, L. A., Farnham, S. D., Nosek, B. A., & Mellott, D. S. (2002). A unified theory of implicit attitudes, stereotypes, self-esteem, and self-concept. *Psychological Review*, 109(1), 3–25. <https://doi.org/10.1037/0033-295X.109.1.3>
- Griffin, C. B., Cooper, S. M., Metzger, I. W., Golden, A. R., & White, C. N. (2017). School racial climate and the academic achievement of African American high school students: The meditating role of school engagement. *Psychology in the Schools*, 54(7), 673–688. <https://doi.org/10.1002/pits.22026>
- Gruber, T., Fuß, S., Voss, R., & Gläser-Zikuda, M. (2010). Examining student satisfaction with 655 higher education services: Using a new measurement tool. *International Journal of Public Sector Management*, 656. <https://doi.org/10.1108/09513551011022474>
- Hambacher, E., & Ginn, K. (2021). Race-visible teacher education: A review of the literature from 2002 to 2018. *Journal of Teacher Education*, 72(3), 329–341. <https://doi.org/10.1177/0022487120948045>
- Hollins, E., & Guzman, M. T. (2005). Research on preparing teachers for diverse populations. In M. Cochran-Smith, & K. Zeichner (Eds.), *Studying teacher education: The report of the AERA panel on research and teacher education* (pp. 477–548). Lawrence Erlbaum Publishers.
- Hosseini, N., Leijgraaf, M., Gaikhorst, L., & Volman, M. (2025). Navigating challenges and tensions in social justice-oriented teacher education: A review of the literature. *Review of Educational Research*. <https://doi.org/10.3102/00346543251325572>
- Hu, L.-t., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1–55. <https://doi.org/10.1080/1070519909540118>
- Juang, L. P., Moffitt, U., Schachner, M. K., & Pevec, S. (2021). Understanding ethnic-racial identity in a context where “race” is taboo. *Identity*, 21(3), 185–199. <https://doi.org/10.1080/15283488.2021.1932901>
- Keels, M., Durkee, M., & Hope, E. (2017). The psychological and academic costs of school-based racial and ethnic microaggressions. *American Educational Research Journal*, 54(6), 1316–1344. <https://doi.org/10.3102/0002831217722120>
- Klassen, R. M., Tze, V. M. C., Betts, S. M., & Gordon, K. A. (2011). Teacher efficacy research 1998–2009: Signs of progress or unfulfilled promise? *Educational Psychology Review*, 23(1), 21–43. <https://doi.org/10.1007/s10648-010-9141-8>
- Klemenz, S., König, J., & Schaper, N. (2019). Learning opportunities in teacher education and proficiency levels in general pedagogical knowledge: New insights into the accountability of teacher education programs. *Educational Assessment, Evaluation and Accountability*, 31(2), 221–249. <https://doi.org/10.1007/s11092-019-09296-6>
- Knowles, R. T., & Hawkman, A. M. (2020). Anti-racist quantitative research: Developing, validating, and implementing racialized teaching efficacy and racial fragility scales. *The Urban Review*, 52(2), 238–262. <https://doi.org/10.1007/s11256-019-00526-1>
- Kohli, R. (2018). Behind school doors: The impact of hostile racial climates on urban teachers of color. *Urban Education*, 53(3), 307–333. <https://doi.org/10.1177/0042085916636653>
- Kohli, R., Arteaga, N., & McGovern, E. R. (2018). “Compliments” and “Jokes”: Unpacking racial microaggressions in the K-12 classroom. In G. C. Torino, D. P. Rivera, C. M. Capodilupo, K. L. Nadal, & D. W. Sue (Eds.), *Microaggression theory* (1st ed., pp. 276–290). Wiley. <https://doi.org/10.1002/9781119466642.ch17>
- Ladson-Billings, G. (1999). Chapter 7: Preparing teachers for diverse student populations: A critical race theory perspective. *Review of Research in Education*, 24(1), 211–247. <https://doi.org/10.3102/0091732X024001211>

- Ladson-Billings, G. (2006). Yes, but how do we do it? In J. Landsman, & C. Lewis (Eds.), *White teachers/diverse classrooms: A guide to building inclusive schools, promoting high expectations, and eliminating racism*. Stylus Publishing.
- Ladson-Billings, G. (2009). Race still matters: Critical race theory in education. In M. W. Apple, W. Au, & L. A. Gandin (Eds.), *The Routledge international handbook of critical education* (pp. 110–122). Routledge. <https://doi.org/10.4324/9780203882993>.
- Legette, K. B., Iruka, I. U., Halberstadt, A. G., & Forte, A. B. (2023). Teachers' awareness of systemic and individual racial bias as a first step towards anti-racist schools. *Teaching and Teacher Education*, 132, Article 104213. <https://doi.org/10.1016/j.tate.2023.104213>
- Leonard, J. (2018). *Culturally specific pedagogy in the mathematics classroom: Strategies for teachers and students*. Routledge.
- Lui, P. P., & Quezada, L. (2019). Associations between microaggression and adjustment outcomes: A meta-analytic and narrative review. *Psychological Bulletin*, 145(1), 45–78. <https://doi.org/10.1037/bul0000172>
- Massumi, M., & Fereidooni, K. (2017). Die rassismuskritische Professionalisierung von (angehenden) Lehrkräften: die Notwendigkeit einer Kompetenzerweiterung [Anti-racist professionalization of (prospective) teachers: The need for an expansion of professional competence]. In S. Barsch, N. Glutsch, & M. Massumi (Eds.), *Diversity in der LehrerInnenbildung: Internationale Dimensionen der Vielfalt in Forschung und Praxis* (pp. 51–76). Waxmann.
- Matschiner, A. (2023). A systematic review of the literature on inservice professional development explicitly addressing race and racism. *Review of Educational Research*, 93(4), 594–630. <https://doi.org/10.3102/00346543221125245>
- Mellers, B. A., & McGraw, A. P. (2001). Anticipated emotions as guides to choice. *Current Directions in Psychological Science*, 10(6), 210–214. <https://doi.org/10.1111/1467-8721.00151>
- Miles, R., & Brown, M. (2003). *Racism* (2). Routledge.
- Morris, D. B., Usher, E. L., & Chen, J. A. (2017). Reconceptualizing the sources of teaching self-efficacy: A critical review of emerging literature. *Educational Psychology Review*, 29(4), 795–833. <https://doi.org/10.1007/s10648-016-9378-y>
- Muthén, B. O., & Muthén, L. K. (2012). *Mplus user's guide* (7th ed.). Muthén & Muthén.
- Paetsch, J., Heppt, B., & Meyer, J. (2023). Pre-service teachers' beliefs about linguistic and cultural diversity in schools: The role of opportunities to learn during university teacher training. *Frontiers in Education*, 8, Article 1236415. <https://doi.org/10.3389/educ.2023.1236415>
- Paetsch, J., & Schlosser, A. (2022). Student teachers' perceived changes of learning conditions during COVID-19: The role of internal resource management strategies, intrinsic motivation, and preferences for lesson formats. *Frontiers in Psychology*, 13, Article 894431. <https://doi.org/10.3389/fpsyg.2022.894431>
- Pevce-Zimmer, S., Juang, L. P., & Schachner, M. K. (2024). Promoting awareness and self-efficacy for culturally responsive teaching of pre-service teachers through the identity project - A mixed methods study. *Identity*, 24(4), 288–306. <https://doi.org/10.1080/15283488.2024.2344086>
- Pew Research Center. (2020). Amid national reckoning, Americans divided on whether increased focus on race will lead to major policy change. <https://www.pewresearch.org/social-trends/2020/10/06/amid-national-reckoning-americans-divided-on-whether-increased-focus-on-race-will-lead-to-major-policy-change/>.
- Pew Research Center. (2022). Teens, social media and technology. https://www.pewresearch.org/wp-content/uploads/sites/20/2022/08/PI_2022.08.10_Teens-and-Tech_FINAL.pdf.
- Pfitzner-Eden, F. (2016). Why do I feel more confident? Bandura's sources predict preservice teachers' latent changes in teacher self-efficacy. *Frontiers in Psychology*, 7, Article 104486. <https://doi.org/10.3389/fpsyg.2016.01486>
- Pollock, M., Deckman, S., Mira, M., & Shalaby, C. (2010). "But what can I do?": Three necessary tensions in teaching teachers about race. *Journal of Teacher Education*, 61(3), 211–224. <https://doi.org/10.1177/0022487109354089>
- Pollock, M., Rogers, J., Kwako, A., Matschiner, A., Kendall, R., Bingener, C., Reece, E., Kennedy, B., & Howard, J. (2022). *The conflict campaign: Exploring local experiences of the campaign to ban "Critical Race Theory" in public K–12 education in the U.S., 2020–2021*. UCLA's Institute for Democracy, Education, and Access.
- Rissanen, I., Kuusisto, E., Timm, S., & Kaukko, M. (2023). Diversity beliefs are associated with orientations to teaching for diversity and social justice: A study among German and Finnish student teachers. *Teaching and Teacher Education*, 123, Article 103996. <https://doi.org/10.1016/j.tate.2022.103996>
- Sablan, J. R. (2019). Can you really measure that? Combining critical race theory and quantitative methods. *American Educational Research Journal*, 56(1), 178–203. <https://doi.org/10.3102/0002831218798325>
- Salter, P. S., Adams, G., & Perez, M. J. (2018). Racism in the structure of everyday worlds: A cultural-psychological perspective. *Current Directions in Psychological Science*, 27(3), 150–155. <https://doi.org/10.1177/0963721417724239>
- Schlosser, A., & Paetsch, J. (2023). The role of emotion and reflection in the development of student teachers' self-efficacy when analyzing video lessons. *Frontiers in Psychology*, 14, Article 1080883. <https://doi.org/10.3389/fpsyg.2023.1080883>
- Schulz, W., Ainley, J., Fraillon, J., Losito, B., Agrusti, G., & Friedman, T. (2018). *Becoming citizens in a changing world: IEA international civic and citizenship education study 2016 international report*. Springer International Publishing. <https://doi.org/10.1007/978-3-319-73963-2>
- Shelton, S. A., & Barnes, M. E. (2016). "Racism just isn't an issue anymore": Preservice teachers' resistances to the intersections of sexuality and race. *Teaching and Teacher Education*, 55, 165–174. <https://doi.org/10.1016/j.tate.2016.01.008>
- Siwatu, K. O., Chesnut, S. R., Alejandro, A. Y., & Young, H. A. (2016). Examining preservice teachers' culturally responsive teaching self-efficacy doubts. *The Teacher Educator*, 51(4), 277–296. <https://doi.org/10.1080/08878730.2016.1192709>
- Sleeter, C. E. (2017). Critical race theory and the whiteness of teacher education. *Urban Education*, 52(2), 155–169. <https://doi.org/10.1177/0042085916668957>
- Stoffers, M., Barnes, T. N., Strickland, L., Jung, J., Branch, K., Perry, D., & Hatchimonji, D. (2025). Pilot study of an anti-racist professional development: Effects on educators' multicultural attitudes and efficacy. *Journal for Multicultural Education*, 19(1), 14–27. <https://doi.org/10.1108/JME-06-2024-0064>
- Sue, D. W., Capodilupo, C. M., Torino, G. C., Bucceri, J. M., Holder, A. M. B., Nadal, K. L., & Esquilin, M. (2007). Racial microaggressions in everyday life: Implications for clinical practice. *American Psychologist*, 62(4), 271–286. <https://doi.org/10.1037/0003-066X.62.4.271>
- Täschner, J., Dicke, T., Reinhold, S., & Holzberger, D. (2024). "Yes, I Can!" A systematic review and meta-analysis of intervention studies promoting teacher self-efficacy. *Review of Educational Research*, 95(1), 3–52. <https://doi.org/10.3102/00346543231221499>
- Tschannen-Moran, M., Hoy, A. W., & Hoy, W. K. (1998). Teacher efficacy: Its meaning and measure. *Review of Educational Research*, 68(2), 202–248. <https://doi.org/10.3102/00346543068002202>
- Ulbricht, J., Schachner, M. K., Civitillo, S., & Juang, L. (2024). Fostering culturally responsive teaching through the identity project intervention: A qualitative quasi-experiment with pre-service teachers. *Identity*, 24(4), 307–330. <https://doi.org/10.1080/15283488.2024.2361890>
- Walton, J., Priest, N., Kowal, E., White, F., Brickwood, K., Fox, B., & Paradies, Y. (2014). Talking culture? Egalitarianism, color-blindness and racism in Australian elementary schools. *Teaching and Teacher Education*, 39, 112–122. <https://doi.org/10.1016/j.tate.2014.01.003>
- Wang, C., & Atwal, K. (2015). School climate, discrimination, and depressive symptoms among Asian American adolescents. *Contemporary School Psychology*, 19(3), 205–217. <https://doi.org/10.1007/s40688-014-0040-8>
- Wuensch, M., Frenzel, A. C., Pekrun, R., & Sun, L. (2025). Enjoyable for some, stressful for others? Physiological and subjective indicators of achievement emotions during adaptive versus fixed-item testing. *Contemporary Educational Psychology*, 82, Article 102388. <https://doi.org/10.1016/j.cedpsych.2025.102388>
- Zee, M., & Koomen, H. M. Y. (2016). Teacher self-efficacy and its effects on classroom processes, student academic adjustment, and teacher well-being: A synthesis of 40 years of research. *Review of Educational Research*, 86(4), 981–1015. <https://doi.org/10.3102/0034654315626801>
- Zick, A., Küpper, B., Mokros, N., & Achour, S. (Eds.). (2023). *Die distanzierte Mitte: Rechtsextreme und demokratiegefährdende Einstellungen in Deutschland 2022/23 [The distanced center: Right-wing extremist and anti-democratic attitudes in Germany 2022/23]*. Dietz.
- Zick, A., Mokros, N., & Küpper, B. (2025). Rechtsextremismus in der Mitte der Gesellschaft [Right-wing extremism in the centre of society]. In A. Zick, B. Küpper, N. Mokros, & M. Eden (Eds.), *Die angespannte Mitte – Rechtsextreme und demokratiegefährdende Einstellungen in Deutschland 2024/25* (pp. 69–124). Dietz.