Antecedents, implications, and professional development of teachers’ multiculturalism

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General Discussion
The truth is, so long as our children are being taught by white teachers, being taught by schools focused on the needs of white children, learning from textbooks teaching white culture, and taking tests designed for white students, our children of color are going to have a hard time engaging with and succeeding in schools.

— Ijeoma Oluo, 2019, p. 126
CHAPTER 1

General Introduction
Present educational institutions are struggling to create environments in which all students experience equal levels of opportunities, representation, and belongingness (Huijnk & Andriessen, 2016). Interpersonal biases from peers and teachers, and structural barriers such as mainstream education that does not relate to minoritized students’ personal experiences and frames of reference (Stevens et al., 2019) seem to be at the core of this challenge.

The current dissertation tries to respond to this challenge by examining teachers’ responsiveness to diversity in the classroom and how it relates to students’ social and academic experiences. Next, it establishes some important teacher characteristics that are associated with teachers’ multicultural orientation and examines possible positive effects of professional learning in improving teacher responsiveness to diversity.

Although the challenges educational institutions experience are similar in many European countries (Council of Europe, 2017), societies rely on different strategies to address diversity in education (Fine-Davis & Faas, 2014). In this dissertation, we zoom in on the Dutch educational context – more specifically, on Dutch primary school classrooms. I will, therefore, first provide an overview of the Dutch socio-political context, which undoubtedly affects policies and practices employed by schools and teachers. The remainder of this chapter introduces the theoretical framework and the terminology that help us organize and interpret the findings of the research that are delineated in the following chapters. I conclude this introduction by outlining these chapters.

**Cultural Diversity in the Netherlands: Background Information**

During the past few decades, the Netherlands, like many other European countries, has become increasingly ethnically and culturally diverse. Based on the latest figures, about 1 in every 4 individuals, i.e., 4,312,289 people in total, have a migration background in the Netherlands. This includes people who were born abroad (the first generation) and those who were born in the Netherlands and of whom at least one of their parents is an immigrant (Het Centraal Bureau voor de Statistiek, 2021). Accordingly, around 36% of primary school students currently has a migratory background (Onderwijs in Cijfers, 2020), which has been previously found to approach 50% in big cities such as Amsterdam, Rotterdam, Utrecht, and Den Haag (as reported in Stevens, Crul, Slootman, Clycq, & Timmerman, 2019).

The largest minoritized ethnic groups in the Netherlands originate from the former Dutch colonies of Surinam and the Antilles or have migrated to the country as ‘guest workers’ in the 60’s and 70’s from Turkey and Morocco, invited by the Netherlands due to shortages in “low-skilled” labor. Although the guest workers were initially presumed to stay temporarily,
this was not the case, and they became the first-generation immigrants in the Netherlands. The subsequent family migration through reunification and marriage drove a prevailing rise of legal immigration (Ong, 2014). In the current dissertation, I focus specifically on individuals with a Turkish or Moroccan heritage. This is because they experience higher levels of exclusion from the Dutch society compared to the other minoritized groups in the Netherlands, as a result of discrimination, unequal representations and opportunities, and low socio-economic and educational position (Huijnk & Andriessen, 2016). The discussions on cultural diversity often revolve around these groups due to their connection to Islam and the ongoing discourse about integration challenges of Muslim communities (Rijkschroeff et al., 2005; Verkuyten & Martinovic, 2006).

Initial occupation of “low-skilled” jobs by the first-generation immigrants from these groups laid the groundwork for an economically disadvantaged position in the Dutch society, with lower employment rates and lower wages in the labor market (Rijkschroeff et al., 2005). Their access to members of the host society, thus to necessary information about the host society and the labor market (i.e., social capital), and their efforts in mastering the host language (i.e., human capital; Stark, 2011) have been further frustrated by residential and school segregation (Huijnk & Andriessen, 2016).

The Netherlands has a history of school segregation along religious-political lines. The flow of migrants, relative secularization of the country, and residential segregation together with parental freedom of school choice, however, intensified a new type of school segregation based on socio-economic status (Boterman, 2019; Peters & Walraven, 2011). Due to their potential for counteracting the reproduction of the minoritized ethnic groups’ disadvantaged socio-economic position in the society, desegregation of schools and the role of schools in improving integration became important topics of interest for policy makers, parents, and researchers (Stark, 2011).

School segregation along socio-economic and ethnic lines, however, continues to this day. But even in mixed schools, meaningful contact, dialogue, and integration are not self-evident (Peters & Walraven, 2011). Previous research in Dutch schools indicate that even in culturally diverse schools with many different ethnic groups, children rarely have friendships and casual contacts with peers of a different ethnic background (Baerveldt et al., 2007; Fortuin et al., 2014; Vermeij et al., 2009). In the literature, this has been explained by the homophily principle – individuals’ preference to be associated with similar others, as this facilitates mutual understanding, liking, and formation of close relationships (Leszczensky & Pink, 2015; Smith et al., 2014). To a large extent, these similarities can be explained by a similar ethnic background (McPherson et al., 2001). Mixed classrooms in and of themselves

An ethnic group is a group that may share some common cultural features that differ from those of other groups (Smedley & Smedley, 2005). Ancestry, history, tradition, the way people think about the world, their social roles, and language are just some of the cultural features that may differ between groups (Causadias, 2013).
therefore seem to be insufficient for integrating peer groups of different ethnic backgrounds. In such situations, mutual liking and formation of friendships need to be explicitly supported by institutional authority figures such as teachers (see Intergroup Contact Theory; Allport, 1954; Pettigrew & Tropp, 2006).

Integration Policies & Education

Integration policy refers to the measures taken to ensure full participation of migrants and minoritized groups to mainstream society and institutions, with a focus on counteracting economic disadvantages and improving their socio-economic position and cultural acculturation in the host society (Rijkschroeff et al., 2005).

The Dutch integration policy initially regarded the protection of minoritized groups’ own culture and language as a means to facilitate their preparation for participating and functioning in the Dutch public spheres (Driessen, 2000; Rijkschroeff et al., 2004). This was supported by educational practices, such as offering Onderwijs in Eigen Taal en Cultuur (OETC; ‘Education in Own Language and Culture’, including lessons for Turkish and Moroccan students aimed at developing their mother tongue and cultural knowledge of their country of origin) and employing foreign teaching assistants. Such multicultural education with emphasis on students’ own language and culture was expected to contribute to a positive self-concept, to provide intrinsic motivation, and to improve their educational opportunities in society (Troyna & Williams, 1986), and thus was expected to facilitate the integration of immigrants (Rijkschroeff et al., 2005).

From the late 1980s onwards, integration policies stopped accommodating the maintenance of minoritized groups’ heritage culture and language, abolishing initiatives such as OETC, and started to focus on learning the Dutch language. The extent to which individuals learn the Dutch language has started to be seen as the indication of the importance individuals place on participating in education and in the Dutch society (Wagenvoorde, 2015). With this change in integration policy, multiculturalism and the maintenance of cultural identity was no longer seen as supporting the socio-economic and cultural integration of minoritized groups into the Dutch society, but rather as impeding individuals’ integration (Rijkschroeff et al., 2005). Around 2000’s, instead of providing multicultural education, the main method of combatting the socio-economic disadvantages of minoritized groups took the form of allocating funds to schools proportional to their minoritized student concentration and focusing on Dutch language learning. Multiculturalist policies were replaced by civic integration policies, marked by a focus on personal efforts to fit within the Dutch society, emphasizing the role of active citizenship and merit, while disregarding the hardships individuals face as a group (Mattei & Broeks, 2018).

Dutch integration policies and its effects on the acculturation strategies adopted by minoritized groups can be well understood within the framework of Berry’s Model of Acculturation, also known as Berry’s Fourfold Model (Berry, 1980, 2011; for a more detailed
determination of Dutch citizenship through the lens of Berry’s model, see Wagenvoorde, 2015). Berry recognized that in diverse societies, individuals are compelled to deal with the question of to what extent they maintain their own cultural identity and characteristics on the one hand, and to what extent they should engage with the host culture on the other hand. In his model, preserving one’s heritage culture and identity and participating in the larger host society represent two dimensions that determine intercultural strategies adopted by minoritized groups. A person’s position on these dimensions determines four different strategies that are commonly used to understand the acculturation mechanisms of migrants (e.g., Arends-Tóth & Van de Vijver, 2003; Stevens et al., 2004). A positive orientation to maintain one’s own cultural heritage and at the same time to participate in the larger society and have a positive host cultural identity defines the integration strategy. When members of minoritized groups do not maintain their cultural identity but only seek daily interaction with the mainstream culture, the strategy they pursue is defined as assimilation. On the contrary, when these individuals hold negative attitudes towards the mainstream host culture and wish to maintain their own identity, their strategy is defined as separation. And lastly, if they have negative attitudes towards both their own and the host’s cultural identity, the strategy is defined as marginalization. These strategies are considered to correspond to the strategies adopted by the majority group. The integration strategy of immigration groups is expected to be adopted in response to the multiculturalism strategy of the majority group, assimilation in response to the melting pot, separation to segregation, and marginalization to exclusion strategies respectively.

Seen from the perspective of Berry’s model, the initial multicultural approach of the host country’s integration policies, ensuring both cultural maintenance and participation in the social and economic spheres through emancipation, is in line with the integration strategy adopted by the minoritized groups. The later civic integration policy considers the extent to which an individual orientates themselves to the Dutch culture as an indication of good citizenship (Wagenvoorde, 2015). This merit-based approach to integration, however, discounts the resistance from the majority group members towards the members of the minoritized groups within social domains. As the members of the minoritized groups report, they “want to belong, but when push comes to shove, it’s not allowed” (Andriessen & Wittebrood, 2015 as quoted in Huijnk & Andriessen, 2016). These experiences lead to disengagement of minoritized individuals from the Dutch society and its institutions (Barreto & Ellemers, 2015), also known as separation in Berry’s Model of Acculturation (1980). Therefore, the current efforts to integrate the minoritized groups do not seem to be in sync with the conditions necessary for them to follow an integration strategy. This illustrates that attempts at increasing access to more resources (i.e., human capital) and contact (i.e., social

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3 Berry uses the term ‘dominant’ and ‘non-dominant’ to refer to majority and minoritized groups respectively.
capital) do not automatically lead to better integration, and consequently better educational achievement.

**Ongoing Societal Challenges Around Integration and the Current Dissertation**

The socio-economically disadvantaged position of minoritized groups is not an isolated phenomenon. Social inclusion barriers, educational opportunity and achievement gap between ethnic groups, and the ensuing disadvantaged position of minoritized groups in the labor market are challenges experienced not only in the Netherlands but in many countries today (Council of Europe, 2017). In efforts to overcome these challenges, many Organization for Economic Cooperation and Development (OECD) countries have been showing modest increases in support for multicultural policies that are used alongside civic integration policies (Banting & Kymlicka, 2013). In a majority of OECD countries with a multicultural student profile, diverse perspectives are being integrated throughout the curriculum and students are being taught how to respond to ethnic and cultural diversity (OECD, 2019).

Deviating from the dominant trend amongst other OECD countries, however, civic integration policies substituted multicultural policies in the Netherlands (Banting & Kymlicka, 2013) as multicultural policies were criticized for failing to reduce educational disadvantages and to improve integration of minoritized students (Rijkschroeff et al., 2005). Yet, the same challenges continue to exist under the current policies. Young people with a migration background report feeling less accepted compared to ten years ago, and perceive exclusion as one of the driving forces behind this (Huijnk et al., 2015). Latest figures indicate that, over the last decade, members of minoritized groups, especially from Turkish and Moroccan backgrounds, report feeling less and less at home, experiencing higher levels of discrimination and lower levels of acceptance, and feeling more pessimistic about having equal representation and opportunities in the Netherlands (Huijnk & Andriessen, 2016).

Additionally, minoritized students, although showing improvements, continue to perform more poorly, to have lower levels of retention and attainment, and are still overrepresented in lower level and vocational tracks compared to their ethnic majority counterparts (Huijnk & Andriessen, 2016). In support of these figures, studies find lower teacher expectations and biased selection procedures for entering secondary education for students with a migration background (Baysu et al., 2018; Scheerens & Van Der Werf, 2018; Van De Werfhorst & van Tubergen, 2007). The tracking system that is characterized by overrepresentation of minoritized students in the lower academic tracks creates a bottleneck for these students. It restricts possibilities for their future educational trajectories and opportunities in the labor market, and it limits natural encounters between students from different sociocultural backgrounds that would take place within schools. This, in turn, offers only limited support for social cohesion within the Dutch society (De Onderwijsraad, 2019).
An analysis of past integration policies suggests that the ongoing challenges are due to overlooking such inclusion and exclusion mechanisms within social and academic domains, while focusing strongly on improving social and human capital of individual members of minoritized groups (as reported in Rijkschroeff et al., 2005). This shifts the focus from central integration policies to decentralized interpretation and implementation of these policies within schools and classrooms (Driessen, 2012). Education in the Netherlands is highly decentralized and schools enjoy a high degree of autonomy while local governments play only a minor role (Nusche et al., 2014). This implies that schools are free to determine the content and methods of teaching. Therefore, implementation of the integration policies are generally left to individual schools without specific curricular goals and concrete objectives to be accomplished (Driessen, 2012).

That being said, the ongoing challenge for schools is to create a more inclusive society where people from minoritized groups experience belongingness, wherein they have equal representation and opportunities (Huijnk & Andriessen, 2016), and can therefore benefit from their increased human and social capital. Based on the reports of minoritized group members, interpersonal biases from peers and teachers, and structural barriers such as an education system that transmits and reproduces the mainstream discourse, knowledge, and values while excluding or invalidating those of minoritized students (Stevens et al., 2019) seem to be at the core of this challenge. Yet the extant research to date has not comprehensively explored the role of teachers in facilitating students’ interpersonal relationships, and educational functioning.

The current dissertation tries to respond to this need by offering an analysis of the factors related to teachers’ multiculturalism, implications of multicultural pedagogical practices of teachers and the inclusion and exclusion mechanisms ingrained in these practices on students, as factors that afford the integration strategy of minoritized groups in Berry’s Acculturation Model. The guiding questions of this dissertation are i) Does a multicultural approach potentially benefit students’ peer relationships and educational functioning when investigated at the classroom level?, ii) Which teachers are more likely to adopt a multicultural approach?, and iii) Would teachers benefit from professional learning on multicultural education and if so, how? The underlying theoretical assumptions I used in attempting to answer these questions are based on Intergroup Contact Theory (Allport, 1954; Pettigrew & Tropp, 2006) when examining the effects of multicultural education on peer relationships, and on Self-Determination Theory (Deci & Ryan, 1985) when examining the effects of multicultural education on student motivation as manifested in their engagement.

Theoretical Framework

Multiculturalism depicts an ideology, a reform movement, and a process in which different identities and cultures coexist: differences are acknowledged and seen as a source of richness, and social inequalities and structures are critically examined to strive for equal...
representation of cultures and identities. Through a multicultural approach to diversity in education, as opposed to a colorblind approach wherein cultural differences and group memberships are to a great extent disregarded, it is possible to accept and accommodate differences (Banks, 2004).

In Banks’ (2004) conceptualization of multicultural education, multicultural practices are delineated under five distinct but highly related dimensions. These dimensions postulate that teachers should employ (i) content integration from a variety of cultures in what they teach, reflecting and representing the diversity of their students through texts, histories, values, beliefs, and varying perspectives from different cultures (Koshy, 2017). Moreover, teachers should increase their students’ awareness of (ii) the knowledge construction process and help students to be critical about who the knowledge serves and from whose perspective it was constructed (e.g., cultural references, biases). Next, teachers should aim for (iii) prejudice reduction by modifying their students’ attitudes through teaching methods, materials, and dialogue to decrease negative and improve positive intergroup relations by actively counteracting social biases (i.e., prejudice, stereotyping, discrimination). Further, teachers should aim for an (iv) empowering school culture and social structure, by examining disproportionality in attendance and achievement between groups in various aspects of school (e.g., to giftedness programs). Lastly, teachers should strive for (v) equity pedagogy, i.e., equity in how they teach, by modifying their teaching to include various teaching and assessment styles to facilitate the learning and academic achievement of all students. This requires avoiding standardized, one-size-fits-all approaches to teaching and learning, relating content to students’ lives and creating opportunities for them to engage with learning in accordance with how they engage with the world (e.g., cooperative learning, problem-based learning, role-playing, simulations).

Self-Determination Theory (SDT) posits that conditions at school can facilitate motivation, manifested as engagement, to the extent that they are responsive to students’ basic psychological needs, namely autonomy, competence, and feelings of relatedness (Connell & Wellborn, 1991; Deci & Ryan, 1985; Reeve, 2002; Ryan & Deci, 2000). Evident from the need for a multicultural approach, however, responsiveness of school contexts to students’ needs have been found to differ not only between but also within schools and classrooms.
based on the cultural and ethnic background of students (Skinner & Pitzer, 2012). Specifically, in educational institutions, the curriculum, materials, and instruction tend to be primarily based on the perspective of the majority group. As a result, minoritized groups’ histories and cultures are usually added as a mere side note to the regular curriculum, thereby perpetuating the acceptance of existing inequalities. The biased perspectives in the curriculum are also often mirrored in interpersonal interactions between students and teachers, and between peers (Thijs & Verkuyten, 2014), thwarting minoritized students’ basic psychological needs.

Intergroup Contact Theory suggests that intergroup contact in situations characterized by support from social and institutional figures, equal status, and a cooperative environment, can help reduce intergroup bias and improve interpersonal interactions (Allport, 1954; Pettigrew & Tropp, 2006). Without meaningful contact that is supported by institutional authority figures such as teachers, organizing mixed classrooms seems to be inadequate for creating equal status between students from different ethnic backgrounds, and promoting interethnic attitudes that are positive enough to desegregate peer groups and promote integration.

Grounded on the premises of the two theories, I expected multicultural education to help fulfil the basic needs of students –by stimulating meaningful contact and creating an environment in which they feel validated and can thrive- and thus boost students’ engagement. For this dissertation, the possible positive effect of multicultural education on fulfilling the basic psychological need for relatedness is especially relevant as it represents a major challenge minoritized youth face in the Netherlands in relation to their outgroup.

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4 It is not easy to settle on a definition of culture. García and Guerra (2006) defined the following characteristics as useful in the application of culture to the educational context: Culture, tends to be shared by members of a group, and reflects values, beliefs, perceptions, and ideals that form the lens through which one understands the world. It should be noted that I do not accept culture as consisting of a fixed set of characteristics inherent to individuals or groups, but rather an ongoing transmission and use of knowledge based on the interactions between individuals’ life histories, communities, and social contexts, which affects how individuals experience and interpret the world (Kirmayer, 2012). In the current dissertation, the use of “cultural” or ethnic groups is useful in highlighting the differences that may exist between individuals that teachers should be mindful about, not as a set of assumptions to leave from, but as personalized stories that students can bring out.

Recently in Europe and in other parts of the world alike, certain demographics such as race, ethnicity, socio-economic status, and language background have been associated with culture in predicting academic achievement and therefore have been used interchangeably with culture (García & Guerra, 2006). Similarly, throughout the dissertation, I use ethnicity and language background as proxies for culture. This is, however, not to suggest that they describe the same construct, but it is rather to stress that the cultural features, such as language, that are likely to be shared within these groups can differ from that of the mainstream dominant culture.


Chapter 1

Terminology

Multicultural education

Within the literature on teaching for social justice, next to multicultural education, a variety of intertwined and overlapping conceptual and pedagogical philosophies are frequently mentioned, such as culturally relevant pedagogy/culturally responsive education, culturally responsive teaching, and social justice education (Dover, 2013). I predominantly use multicultural education, as defined by Banks (2004), as an overarching construct, which covers most components of similar pedagogical approaches in ways that are relevant to our studies. More specifically, I would expect these approaches to have similar influences on student peer relationships and motivation, and to be underlined by similar teacher characteristics that promote their application due to their commitment to promoting social and educational equity.

In Chapter 2, I use level of multicultural education and teacher reactions to ethnic victimization as two separate aspects of teachers’ multiculturalism. The terminology I used in this chapter mirrors that of a previous research (i.e., Verkuyten & Thijs, 2002) on which I have grounded the current study. While these constructs are discussed separately within the chapter, they for the most part conform to and portray features of the prejudice reduction dimension of multicultural education as conceptualized by Banks. When bringing together results from different chapters in the General Discussion of the dissertation, I refer to these two separate aspects of teachers’ multiculturalism simply as prejudice reduction.

Banks’ conceptualization of multicultural education is used also in Chapters 3 & 4. In chapter 3, I look at prejudice reduction dimension of multicultural education. In Chapter 4, I use the dimensions of Banks to discern culturally responsive teaching practices of teachers. Similarly, in Chapter 6, I investigate teacher characteristics that are antecedents of culturally responsive teaching practices (Gay, 2000). Culturally responsive teaching is considered by scholars as a specific approach to multicultural education that focuses primarily on classroom-level processes, teacher characteristics, and students’ academic outcomes (Dover, 2013). As we focused our research efforts on classroom dynamics and did not look at school-level processes, which also constitute an aspect of multicultural education (i.e., empowering school culture), I mostly use culturally responsive teaching and multicultural education interchangeably in different studies. In Chapter 5, unlike in other chapters, however, I examine teacher multiculturalism as manifested in their daily classroom management strategies.

Peer relationships

In virtue of the intertwined relationship between the integration policies and the prevalence of adoption of multicultural ideologies in Dutch schools, I chose to use the term integration (as in Berry, 1980, 2011) referring to interactions among teachers and students,
and within students themselves (Nieto & Bode, 2008). I use integration as an umbrella term that reflects students’ relatedness, belongingness, and acceptance to peer groups, while maintaining their own cultural heritage (Berry, 1980, 2011). In Chapter 2, I use social integration and victimization as two aspects of students’ peer relationships. In other chapters, I refer to positive and inclusive teacher-student and peer relationships, friendship formation, prosocial interactions, acceptance of differences between peers to signal integration as desirable outcomes of multicultural education.

Chapters 2 and 5 aim to map out differences in classroom dynamics between the ethnic majority Dutch group and specific minoritized groups. In these chapters, the minoritized groups are comprised of individuals with a migration background from Turkey and Morocco. In contrast, the main interest of Chapters 3 and 4 is not determining differences in these groups’ experiences from that of the majority group. In these chapters, I collapse across different minoritized groups to form only one group, due to pragmatic constraints such as having to estimate high numbers of parameters or to reach reasonable sample sizes. Throughout the dissertation, I use ‘minority’ and ‘minoritized’ adjectives interchangeably when referring to students with a migration history. In one study (Chapter 7), I use language background other than the mainstream language (English) as an indication of a non-mainstream ethnic background.

**Student engagement**

In the chapters that follow, I adopt the conceptualization of engagement as the “outward manifestation of motivation”, and define it as the extent to which a student is actively involved in learning activities and environments (Skinner et al., 2009; Skinner & Pitzer, 2012). This conceptualization assumes that goals and emotions direct attention and behavior, which together reflect an individual’s motivation (Skinner et al., 2009). Only in Chapter 2, I use the term motivation in order to match the labels of the secondary data used in the study, whereas in other chapters I use the term engagement to refer to students’ assessed motivation.
Overview of the Dissertation

The present dissertation on the implications (PART I) and antecedents (PART II) of teacher multiculturalism, and professional learning in multicultural education (PART III) starts with a general introduction (Chapter 1) and continues with three separate parts that aim to explore the three central research questions. The different parts of the dissertation and the relationships they investigate are represented in the conceptual model below (see Figure 1).

Figure 1
A Conceptual Model of the Three Parts of the Dissertation

PART I

Part I of the current dissertation tries to answer the research question “Does a multicultural approach potentially benefit students’ peer relationships and educational functioning when investigated at the classroom level?”. Across three studies, I investigate multicultural practices –pertaining to curriculum, teaching pedagogies, and classroom interactions, in relation to students’ peer relationships and their motivation (manifested as school engagement).

To chart the reciprocal interactions between teachers’ multiculturalism reflected in the prejudice reduction dimension of multicultural education, and students’ peer relationships and motivation, Chapter 2 conceptualizes classrooms as complex systems with a network of interacting components and utilizes the novel psychometric network approach for the first time in educational research \(N = 2,716\). Our results lend support for the positive influence

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5 Previously referred to as psychological networks.
of a multicultural approach to diversity on students’ peer relationships and outline different mechanisms through which multicultural practices may impact majority versus minoritized students’ motivation. The network modeling of multicultural classrooms distinguishes certain patterns of interactions that suggest a mediating role of students’ peer relationships on the effect of multicultural practices on student engagement. Chapters 3 and 4, partially and fully, respectively, test the proposed mediation model.

Chapter 3 introduces a multilevel model to establish the effect of prejudice reduction on student engagement ($n_{\text{teacher}} = 35$, $n_{\text{student}} = 711$). It additionally investigates the potential moderation of this relationship by teachers’ explicit multicultural attitudes and implicit attitudes towards ethnic minoritized groups.

In Chapter 4, I fit a more expansive structural equation model that includes equity pedagogy, content integration, and prejudice reduction dimensions of multicultural education and examine their relationship with students’ engagement in the classroom, and the quality of their peer relationships as a mediator. Therefore, this chapter aims to test the full mediation model hypothesized in Chapter 2. Moreover, I examine these relationships in classrooms with both high and low minoritized student concentrations in order to identify which multicultural practices can aid or frustrate peer relationships and student engagement depending on the intergroup context.

**PART II**

Part II of the dissertation evolves around the research question “Which teachers are more likely to adopt a multicultural approach?”. In two studies, I examine teacher characteristics that are potentially important antecedents of teachers’ responsiveness to diversity in their daily interactions in and around the classroom, as well as in their curriculum and instruction. These characteristics relate to how teachers interpret and act in social situations such as their abilities to accurately understand emotional phenomena (i.e., emotional intelligence) and take the perspective of the other (i.e., perspective taking), and their familiarity with and sensitivity to diversity (i.e., multicultural attitudes). Previously, teachers who possess these characteristics to a greater extent have been found to better recognize and value cultural differences between students (Ponterotto et al., 1998), pay more attention to the variability in their students’ experiences and needs (Darling-Hammond, 2000), address matters around diversity (Ponterotto et al., 1998), and be aware of their own biases that may predispose their judgments (Nieto, 2004).

In Chapter 5, using a within-subjects design, I test whether teachers in Dutch primary schools ($N = 148$) differ in their classroom management strategies towards minoritized students compared to majority students for the same kind of misbehavior and whether this difference is related to their multicultural attitudes and their abilities to recognize and interpret emotions. Teachers responded to various scenarios depicted in vignettes, matched
on the misbehavior but involving either a minoritized or a majority student, by providing the frequency with which they would engage in various intervention strategies.

Chapter 6 seeks quantitative evidence in support of two teacher qualities, namely teachers’ multicultural attitudes and their perspective taking abilities, that have been previously suggested to be important antecedents of a multicultural approach to diversity but so far have been only studied qualitatively. I use multivariate multiple regression analysis (N = 143) to investigate the relationships between these qualities and teachers’ engagement in two separate but related aspects of culturally responsive teaching (i.e., socially sensitive and culturally sensitive teaching).

PART III

In light of the findings from Part II, Part III of the dissertation examines whether teachers who received professional learning in multicultural education have different multicultural attitudes and beliefs than teachers who did not receive any professional learning. Latest numbers show that 35% of teachers report ‘developing skills in teaching in multicultural and multilingual settings’ as one of the three areas in which they need more training (OECD, 2019). This is not surprising since, in the Netherlands, teachers do not receive a comprehensive formal education as to how to effectively respond to diversity in their classrooms (Severiens et al., 2014). While this is the case in the Netherlands, in other countries such programs do exists.

Therefore, to answer my third research question “Would teachers benefit from professional learning on multicultural education and if so, how?”, I have collaborated with the Institute for Culture and Society of Western Sydney University, which was part of a 3-year statewide research project ‘Rethinking Multiculturalism/ Reassessing Multicultural Education’, examining approaches to multiculturalism in both urban and rural areas. The project is one of the first worldwide in researching the understanding and application of multicultural education at such a large scale within a very diverse society (Australian Bureau of Statistics, 2016).

Using data obtained from in-service primary and secondary public-school teachers in New South Wales (N = 3,006) and structural equation modeling, in the last empirical chapter, Chapter 7, I investigate the relationships between professional learning in multicultural education and teachers’ beliefs about the effectiveness of multicultural strategies in fostering a culturally inclusive environment and the importance of these strategies in providing equitable opportunities for students. Moreover, I examine the relationship between professional learning and teachers’ support for monocultural (as opposed to multicultural) ideologies and practices. I examine these relationships separately for professional learning received at three different time points, namely during pre-service and in-service years, and as postgraduate qualifications.
Finally, in Chapter 8, I conclude this dissertation by summarizing and integrating the main findings from the six empirical studies and discussing their scientific and practical implications.
Does a multicultural approach potentially benefit students’ peer relationships and educational functioning when investigated at the classroom level?
Students’ relationships with peers and teachers strongly influence their motivation to engage in learning activities. Ethnic minority students, however, are often victimized in schools, and their educational achievement lags behind that of their majority group counterparts. On this account, the aim of the present study was to explore teachers’ multicultural approach within their classrooms as a possible factor of influence over students’ peer relationships and motivation. We utilized the novel methodology of estimating psychometric networks in order to map out the interactions between these constructs within multicultural classrooms. Results indicate that a multicultural approach is directly connected to student motivation for both ethnic majority and minority students. Social integration within peer groups, however, seems to be a possible mediator of this relationship for the ethnic minority students. The hypothesis generating nature of the psychometric network approach calls for a more thorough investigation of this generated mediation hypothesis.

This chapter is based on:

CHAPTER 2
Exploring Multicultural Classroom Dynamics:
A Network Analysis
Students who have better relationships with peers and teachers (Klem & Connell, 2004), and feel greater sense of relatedness, belongingness, inclusion, and support are more likely to be motivated to engage in learning (Deci & Ryan, 1985; Furrer & Skinner, 2003; Wentzel, 2009). Research shows that stereotypical expectations and cultural differences may, however, hamper the quality of relationships, leaving some students more vulnerable to rejection and exclusion. More specifically, students with a minority background are more likely to face ethnic victimization in the form of name-calling, teasing, and social-exclusion from peer groups (Verkuyten et al., 1997; Verkuyten & Thijs, 2002), which may to some extent explain their low levels of adjustment to the educational system, (Dimitrova et al., 2016) as not feeling socially well integrated within a peer group undermines motivation (Cerezo & Ato, 2010) and educational achievement (Walton & Cohen, 2007). Studies have shown that victimized students, compared to their more accepted classmates, are less engaged with school and academic goals (Totura et al., 2014), and receive lower grades (Buhs & Ladd, 2001; Lopez & Dubois, 2005). Indeed, in many European countries, ethnic minority students’ educational achievement lags behind that of their majority counterparts (Schleicher, 2006). On this account, the current study uses the novel methodology of psychometric networks to explore a multicultural approach to diversity as a possible factor of influence over students’ motivation – a strong predictor of educational achievement (Lee, 2014).

**A Multicultural Approach to Diversity in the Classroom**

Amongst their many roles, teachers act as role models, disciplinarians, and instructors (Furrer & Skinner, 2003). They create guidelines for children’s social behavior (Ryan & Patrick, 2009), give explicit messages about their peer interactions, and ideally act as role models in how to engage in respectful communication (Jennings & Greenberg, 2009). Teachers, therefore, have the potential to influence student motivation with how they approach diversity, by promoting or undermining students’ sense of relatedness (Furrer & Skinner, 2003) and belonging to social groups (Osterman, 2000).

A multicultural approach to diversity has been designed to improve both students’ intergroup relations and educational achievement by establishing anti-discriminatory norms, emphasizing the negative consequences for victims of ethnic discrimination, educating children about ethnic-cultural differences, and promoting recognition and acceptance of others (for a broad conceptualization see Banks, 2004). Indeed, teachers have been found to influence students’ attitudes based on the multiculturalism norms they express (Grütter & Meyer, 2014; Verkuyten & Thijs, 2013), and their constructive reactions to negative peer incidents have been found to counteract the undesired outcomes of mixed education, such as ethnic victimization (Verkuyten & Thijs, 2002). Both when experimentally manipulated and measured as an individual difference, multiculturalism was found to predict lower prejudice in majority group members (as reported in Plaut, Thomas, & Goren, 2009). Similarly, minority
students have been found to perceive less discrimination in classrooms where teachers endorse multiculturalism (Brown & Chu, 2012).

Nevertheless, little is known about how teachers implement multicultural strategies and how it affects the students in European countries as the research in this field has been mainly focusing on the U.S. educational context (Agirdag et al., 2016; Verkuyten & Thijs, 2013). The questions that remain is “how and to what extent a multicultural approach influences student motivation in European classrooms?” Examining multiculturalism outside of the U.S. can, therefore, not only improve student outcomes in those countries, but can also contribute to the theoretical advancement within the field of multicultural education by either validating or contradicting the existing frameworks (Agirdag et al., 2016). As such, the current study addresses the stated research question by modeling students’ motivation and their perceptions of teachers’ multiculturalism in relation to their classroom peer relationships (as possible means of teacher influence over student motivation).

**Classrooms as Complex Systems**

Grounded on an ecological framework, the current study views classrooms as complex social systems (Bronfenbrenner & Morris, 2006) in which all actors (students and teachers) in a classroom influence each other and the effect of one depends on the nature of the other (Burns & Knox, 2011). To map out multicultural classroom interactions, we aim to introduce a first application of state-of-the-art exploratory research methods in which psychometric network models are used.

The use of network modeling for exploratory studies has been extensively applied to personality research (e.g., Costantini et al., 2017; Costantini, Epskamp, et al., 2015; Costantini, Richetin, et al., 2015; Cramer et al., 2012), and has been insightful in various other fields of research such as health sciences, social relations, and more recently psychopathology and psychiatry (e.g., Dalege, Borsboom, van Harreveld, Waldorp, & van der Maas, 2017; Deserno, Borsboom, Begeer, & Geurts, 2016; Isvoranu et al., 2016; Kossakowski & Cramer, 2017; McNally, 2016; van Borkulo et al., 2015). Distinct from social networks (Wasserman & Faust, 1994), psychometric networks (Borsboom & Cramer, 2013; Epskamp et al., 2018) are abstract models comprised of a set of nodes that represent variables (e.g., attitudes, symptoms, test items), a set of edges that represent unknown statistical relationships between nodes, and information with regard to the nature of the nodes and edges (e.g., strength of the relationships). The estimation of edges separates psychometric networks from social networks in which the links between the nodes are already known (Costantini, Epskamp, et al., 2015; Epskamp & Fried, 2016). For instance, nodes in a social network could represent students and the edges can represent observed friendships. In a psychometric network, on the other hand, nodes represent variables that differ across people, such as perceived discrimination or motivation. The edges in such networks are unique associations that need to be estimated. These models show conditional association between two variables after controlling for all other variables in
the network, and therefore differ from, for example, factor analysis models and interpreting marginal correlations by highlighting the unique variance between two pairs of variables, rather than the common variables over all variables. Such associations arise if there are causal relationships between the variables; and, when no unobserved common causes are assumed, these associations are often not present if there are no causal relationships (Koller & Friedman, 2010; Lauritzen, 1996).

**Relationships Between Network Models and Structural Equation Modeling**

The hypothesis generating and exploratory nature of the network approach extends the benefits of hypothesis testing statistical techniques widely used in the social sciences. For a better understanding of the network approach’s contributions, we compare it to *Structural Equation Modeling* (SEM) as it is a common methodology that can be used with the type of data used in the current study (e.g., Le & Johansen, 2011). The arguments below summarize more detailed discussions on this topic published elsewhere (Epskamp et al., 2016; Epskamp, Rhemtulla, et al., 2017).

(1) SEM allows for confirmatory testing of causal models, through the use of directed network models, typically assumed to be **acyclic** (a variable does not cause itself directly or indirectly). Exploratory estimation of causal models, however, is far from trivial, mainly because there might be a great number of equivalent fitting models that are all differently parameterized and the possibility of including more edge parameters than there are observed pieces of information (variances and covariances). Both equivalent models and having potentially more parameters than observed pieces of information may lead to under-identification. Undirected networks, on the other hand, are uniquely identified and not potentially over-parameterized. These properties allow for efficient exploratory model selection search algorithms, such as the regularization techniques used in this paper, that accurately retrieve the network structure with increasing sample size (Foygel & Drton, 2010).

(2) There is a close connection between undirected network models (such as partial correlation networks) and causal models (such as used in SEM). When items are assumed not to covary due to the presence of unobserved common causes, we can expect a non-zero partial correlation between variables $A$ and $B$ only if $A$ causes $B$, $B$ causes $A$, there is a reciprocal relationship between them, or both $A$ and $B$ cause a third variable in the network. As such, the presence of an edge in the undirected network may be indicative of a potential causal path, as we would expect such an edge to occur if there is a causal path in the true generating model. To this end, undirected network models can be interpreted as exploratory hypothesis-generating models that highlight potential causal pathways.

(3) Compared to a second way in which SEM is often used—the modeling of latent common causes, while highlighting relations between variables—the network approach, takes dependencies into account and controls for every other variable in the network; therefore, it focuses on unique variance between variables rather than shared variance across variables.
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(Costantini, Epskamp, et al., 2015). The shared variance, however, is still retained in the network; thus, the influence of latent common causes emerges in the network as clusters of interconnected nodes. To this end, clusters in a network may be indicative of latent variables, and one may investigate the dimensionality of a dataset by investigating the clustering of the network (Golino & Epskamp, 2017).

Finally, undirected network models are closely related to multiple regression models. The nodes that are connected to a node of interest are also likely to be significant predictors of the node in a multiple regression model. We would thus not expect an edge in the network if an independent variable does not predict the dependent variable. Different from multiple regression, the network also shows which variables would predict the independent variables; thus, mapping out linear prediction and multicollinearity among all the variables (Epskamp & Fried, 2016). To this end, network models may reveal patterns in the data (e.g., mediation) that might otherwise go unnoticed unless we specifically hypothesize and test every possible model with the relevant variables.

The Present Study

Despite the growing interest in psychometric network analysis, this type of analysis has not yet been introduced to the educational literature. Considering its aforementioned benefits, we expect that its application could substantially contribute to our knowledge about interpersonal processes in educational contexts because of its unique approach to classrooms as complex systems. Especially since there is only limited information on multiculturalism in European schools and classrooms, an exploratory and hypothesis generating, detailed (i.e., on an item level), and computationally effective investigation (i.e., simultaneous visualization) of classroom interactions is warranted.

The current study therefore introduces a first application of psychometric network models in order to 1) explore relationships between students’ various classroom experiences to inspect plausible mechanisms with which teachers’ perceived multiculturalism influences student motivation, and 2) compare students with an ethnic majority and minority cultural background in order to understand commonalities and idiosyncrasies in classroom experiences. With the current study, we expand the multicultural education literature by examining teachers’ multicultural approach in relation to student motivation outside of the U.S.; the motivation literature by building on the only few studies investigating the joint influence of teachers and peers on student outcomes (for an overview, see Vollet, Kindermann, & Skinner, 2017), none of which have investigated motivation in relation to multiculturalism; and, the educational literature in general, by introducing the application of the novel psychometric network approach to classroom complex social systems.
Complementary to the previous analyses performed on these data (see Verkuyten & Thijs, 2002), simultaneous visualization of the relationships between items allows us to explore direct and indirect connections between the variables, experiences students find the most important, possible pathways of teacher influence on student motivation, and differences between majority and minority group students. Based on the literature that is briefly reviewed above, we included constructs in our model that are expected to interact with student motivation. We are specifically interested in intrinsic motivation of students that is manifested as interest and enjoyment in learning, which drive task engagement (Deci & Ryan, 1985; Skinner et al., 2008).

As sketched earlier, quality of social interactions influences student motivation. In order to tap on both the positive and negative aspects of these interactions, our models contain social integration and victimization constructs. Social integration refers to the relations among actors, and when discussing ethnic processes, between members of ethnic majority and minority groups (Stark, 2011). In our text, we use social integration as an umbrella term that reflects the degree of relatedness, belongingness, and acceptance to a peer group (Beresnevičiūtė, 2003). Furthermore, we included victimization that can both be general (i.e., non-ethnic victimization) or specifically because of one’s ethnic background (i.e., ethnic victimization) in the form of social exclusion and/or name-calling. Ethnic victimization is an attack and/or negative response about one’s ethnic background, and it may be directed to an individual (i.e., individual ethnic victimization) or a group as a whole (i.e., ethnic peer group victimization; Maes, Stevens, & Verkuyten, 2013), which are both included in our network models. Throughout the text, social integration and victimization are together referred to as ‘peer relationships’. As the degree to which children identify with their ethnic group may either act as a buffer against the negative effects of perceived ethnic victimization by providing social support (Mossakowski, 2003) or may sensitize one by signaling that one’s group identity is depreciated by others (McCoy & Major, 2003), we have not only included students’ ethnic background in our model but also the extent to which students identified with it.

Teachers are instructors and role models, and they can shape the classroom climate with how they respond to diversity. Effectiveness of a multicultural approach in reducing victimization and promoting positive relationships, therefore, depends not only on instruction but also on the perceptions of how teachers themselves manage ethnic diversity and negative interactions (Bigler, 1999; Verkuyten & Thijs, 2002). Hence, in our models, we included level of multicultural education and teachers’ reactions to ethnic victimization, as perceived by

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6 Previous analyses on the data did not include all the variables we have included in our analyses (e.g., motivation, integration). Therefore, a direct comparison between the previous findings and ours was not possible.
the students. The former entails whether teachers explicitly discuss issues related to ethnic diversity in order to foster understanding and appreciation of cultural pluralism, fight any negative interethnic interactions, and promote positive ones. The latter entails whether teachers interfere with acts of victimization, and whether children can approach their teacher to report on such acts (Verkuyten & Thijs, 2002). Throughout the text, these teacher factors are collectively discussed as ‘teachers’ multiculturalism’.

We expect differences between the two groups of students’ networks as majority and minority group children’s classroom experiences differ from each other (e.g., ethnic victimization rates). In the following, we outline the application of psychometric network analysis as it is new to the educational literature (for an application of Ising network modeling to educational data for methodological research see Marsman et al., 2015); however, a more thorough overview of the statistical details can be found in previous publications that are focused strictly on this methodology (e.g., Costantini et al., 2015; Epskamp, Borsboom, & Fried, 2016).

Method

Data and Participants

We reanalyzed the data from Verkuyten and Thijs (2002) who originally investigated the extent of ethnic victimization among different ethnic groups of students. In total, 3,806 children aged 10-13 from 182 primary school classes answered the questionnaire. A small proportion of the data was missing (1.6%). The analyses investigating the cause of missingness (e.g., missing at random, missing completely at random) assume that the data are normally distributed. However, due to the ordinal nature of the data, we could not check this missingness assumption (Jia, 2016). Therefore, we handled missing data with pairwise deletions as it is the default method of handling missing data for network analysis.

As displayed in Table 1, the mean age of the Dutch sample (N = 1,641) was 11.27 years with 49% male, which formed what we operationalized as the ‘majority group’ sample. The Turkish-Dutch sample (N = 612) had a mean age of 11.53 years with 49% male, and the Moroccan-Dutch sample (N = 463) had a mean age of 11.51 years with 52% male. These two ethnic groups formed what we operationalized as the ‘minority group’ sample (N = 1,175)7.

7 The permutation test results, after 5,000 iterations, indicate that Turkish and Moroccan sample networks do not significantly differ from each other, with a p value of .87 and .77 for the difference in overall connectivity and structure respectively. For a visualization of the two networks, see Supplementary Materials Figure S1.
Chapter 2

Table 1
Demographic Characteristics of the Largest Ethnic Groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Dutch $(N = 1641)$</th>
<th>Turkish $(N = 612)$</th>
<th>Moroccan $(N = 463)$</th>
<th>Surinamese $(N = 135)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>49%</td>
<td>49%</td>
<td>52%</td>
<td>58%</td>
</tr>
<tr>
<td>Male</td>
<td>51%</td>
<td>51%</td>
<td>48%</td>
<td>42%</td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>11.27 (0.80)</td>
<td>11.53 (0.83)</td>
<td>11.51 (0.81)</td>
<td>11.42 (0.79)</td>
</tr>
<tr>
<td>Female</td>
<td>11.28 (0.81)</td>
<td>11.48 (0.83)</td>
<td>11.56 (0.81)</td>
<td>11.44 (0.79)</td>
</tr>
<tr>
<td></td>
<td>11.25 (0.79)</td>
<td>11.58 (0.84)</td>
<td>11.46 (0.80)</td>
<td>11.39 (0.80)</td>
</tr>
</tbody>
</table>

Note. Sex is reported in percentages, while the reported age in years refers to the mean age (SD).

Measures

The internal consistency of the scales used, as quantified by Cronbach’s alpha, was relatively poor, ranging from .56 to .69. Cronbach’s alpha was designed to investigate the sum score of scales and is high when each item in a scale correlates highly with all other items in the same scale. A high Cronbach’s alpha thus indicates that individual items of the scale are redundant, as they are very similar. Since the network analysis focuses on the unique role of each item rather than the sum scores, it would not be desirable for the scales to feature high Cronbach’s alpha. In fact, lower internal consistency indicates that responses should be studied at the item level rather than the sum-score level, as is done in the current study (Diamantopoulos et al., 2008).

We included in the analyses items of the scales measuring children’s motivation, general and ethnic victimization at an individual and peer ethnic group level, ethnic background, ethnic identity, social integration, and their perceptions of their teachers’ multiculturalism (level of multicultural education and teacher reactions to ethnic victimization). Items belonging to students’ perceptions of multicultural education and perceptions of teacher reactions to ethnic victimization are referred to as ‘teacher factors’ from here onwards (see Table 2 for item descriptions).

Perceived Level of Multicultural Education

Perceptions of multicultural education were obtained using four questions on a five-point scale (1 = ‘no, never’ to 5 = ‘yes, very often’). Example items are “Does the teacher sometimes talk about different cultures?” and “Does the teacher sometimes talk about being fair to children from different countries?” This scale has been previously used in various Dutch studies (e.g., Kinket & Verkuyten, 1997, 1999), and showed an adequate Cronbach’s alpha of .69 in the current study.
Perceived Teacher Reactions to Ethnic Victimization

Students were asked to imagine that a child is being called names and teased by others because he or she is from another country. Subsequently, with four questions on a five-point scale (1 = ‘no, never’ to 5 = ‘yes, very often’), they were asked whether their teacher would say and do something about the incident and whether they and their classmates could approach their teacher about it. This scale has been successfully used in previous Dutch studies (e.g., Kinket & Verkuyten, 1997), and showed an adequate Cronbach’s alpha of .62 in the current study.

Motivation

Children’s learning motivation has been assessed using four questions on a five-point scale (1 = ‘not at all’ to 5 = ‘very much’) asking the children, for instance, to indicate the extent to which they like learning new things and desire to know a lot. The items reflect various aspects of intrinsic motivation to gain mastery of educational material, such as enthusiasm, interest, and enjoyment that are the foundations of high-quality learning (Ryan et al., 1992; Skinner, Furrer, Marchand, & Kindermann, 2008), and have Cronbach’s alpha of .58.

Non-ethnic Victimization

Perceived personal victimization was assessed with two questions on a five-point scale (1 = ‘no, never’ to 5 = ‘yes, very often’). The children were asked to indicate the frequency with which they were called names and teased, and socially excluded from play in school. These experiences represent important aspects of peer victimization, and have been widely investigated in previous research using the current items (Agirdag et al., 2011; Thijs et al., 2014; Verkuyten & Thijs, 2006). The reliability analysis indicated a Cronbach’s alpha of .60.

Individual Ethnic Victimization

Following previous research (e.g., Verkuyten & Thijs, 2006), perceived personal ethnic victimization in school was assessed with two questions on a five-point scale (1 = ‘no, never’ to 5 = ‘yes, very often’). The children were asked to indicate the frequency with which they were called names and teased, and socially excluded from play due to their ethnic background (Cronbach’s alpha = .68).

Ethnic Peer Group Victimization

The same two questions that were used to assess individual ethnic victimization were asked in relation to children’s peer ethnic group (Cronbach’s alpha = .68).

Social Integration

Children answered four questions on a four-point scale (1 = ‘no at all’ to 4 = ‘very much’), which assessed various aspects of social integration reflecting the relations among actors,
stability of social relations, and how one perceives himself/herself in a social situation (Beresneviiutë, 2003). The items showed adequate consistency, with a Cronbach’s alpha of .58.

**Ethnic background**

Children indicated their ethnic background self-definitions on an open question and on two questions concerning the background of their parents. Children’s ethnic background was identified based on whether they used the same label to define themselves as well as their mother and father.

**Ethnic Identification**

Children’s ethnic identification was assessed with two questions on a four-point scale (1 = ‘no at all’ to 4 = ‘very much’) indicating how happy they feel belonging to their ethnic group, and how important it is for them to belong to their ethnic group. The items were successfully used in previous research (e.g., Maes, Stevens, & Verkuyten, 2013), and showed Cronbach’s alpha of .56 in the current study.

**Class Composition**

For each classroom, we calculated the combined proportion of students who identified themselves and their parents as Turkish and Moroccan.

**Procedure - Network Construction and Visualization**

The network construction, visualization, and analysis were performed using the open-source R statistical software (R Development Core Team, 2016) and the R packages bootnet (Epskamp et al., 2018) and qgraph in particular (Epskamp et al., 2012). The R script is available in the Supplementary Materials. The networks represent *Gaussian graphical models* (Lauritzen, 1996); every item from each measure is represented as a ‘node’, and the partial correlation between any two items after controlling for all other items is represented as an ‘edge’. Green and red edges symbolize positive and negative partial correlations respectively; the wider and more saturated the edges, the stronger the partial correlations are. The thickest possible links correspond to the maximum value of the strongest edge in the network (this is displayed below the networks as *maximum*) and the closer the edge weights get to 0 the less saturated and smaller the edge is. For controlling spurious connections, which occur when two variables have no actual relationship but are statistically linked, we used a regularization method that resulted in a sparser and more interpretable network. Specifically, we utilized the ‘graphical LASSO’ algorithm as implemented in the ‘glasso’ package for R (Friedman et al., 2008, 2015). The glasso algorithm uses a tuning parameter controlling the network sparsity, which we selected by minimizing the extended Bayesian information criterion (EBIC; Chen & Chen, 2008; as described in Foygel & Drton, 2010).
There is no threshold necessary for the edges to be displayed; all edges that survive regularization are displayed within the networks. This regularization ensures that only the statistically meaningful edges are retained in the network and controls for Type 1 errors that may result from sampling error. We used the automated procedure implemented in the ‘qgraph’ package, following the steps from Epskamp and Fried (2016). The glasso algorithm requires a covariance matrix as input for which we used polychoric correlations to account for the ordinal nature of the data (Epskamp & Fried, 2016). The correlation matrices and the resulting weight matrices after the glasso regularization are provided in the Supplementary Materials Table S3.

**Analytical Approach**

**Network Analysis and Comparison**

We focused our analyses on the largest ethnic minority groups, the three of which were of specific interest to us. People of Turkish and Moroccan origin form the largest ethnic minority groups in the Netherlands and also are the most victimized (CBS, 2016; Verkuyten & Thijs, 2002). Thus, we focused on these two groups as ethnic minority groups and compared them to the Dutch majority group. For more comparable networks in terms of sample size, we combined the Turkish and Moroccan minority groups under one sample after establishing the similarity of their corresponding networks (see Supplementary Materials Figure S1 for a comparison of the Turkish and Moroccan minority group networks). The constructed majority and minority group networks are analyzed and compared in terms of their overall structure, importance of each node (centrality), and shortest pathways between teacher factors (teacher reactions to ethnic victimization and level of multicultural education) and student motivation. For each network in our study, we performed accuracy tests to check how subjective the results are to sampling variation (Epskamp, Borsboom, et al., 2016; see Supplementary Materials Figures S2-7).

The networks are compared using a permutation-based test that is integrated in the R-package NetworkComparisonTest (van Borkulo et al., 2015). The test compares two networks in terms of (1) their network structures as a whole, in other words, whether they are identical, (2) their overall connectivity level, simply put, whether they are connected at the same density – average strength of all edge weights, and (3) the difference in strength of individual edge weights (i.e., connections; for a more detailed methodological description, see van Borkulo et al., 2016). In addition, note that Supplementary Materials Figures S6-7 (plots on the left) inform us of all the edges that are significantly different from each other (α < .05). In our networks, much more than half of the edges within the networks can be interpreted as significantly

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8 One exception is when we constructed the between class effects network, which is further detailed below. This network is based on regular Pearson correlations.
different from one another and we can therefore safely say that one edge is stronger than another edge when interpreting each network.

Each node’s importance within the networks can be investigated by looking at the centrality measures, the most commonly used being node ‘strength’, ‘closeness’, and ‘betweenness’ (Costantini, Epskamp, et al., 2015; Newman, 2010; Opsahl et al., 2010). Traveling from these nodes to other nodes is fairly easy because they are very well connected within their networks. Therefore, they could be understood as having high predictive value for other nodes (Costantini, Epskamp, et al., 2015). In undirected weighted networks, as the ones computed here, we compute the node ‘strength’ by examining how many connections are attached to each node and how strong these connections are. ‘Closeness’ quantifies how far removed a node is from all other nodes, and ‘betweenness’ measures how often a node is situated within the shortest path between two other nodes (Opsahl et al., 2010). The centrality plots are visualized using the R-package ggplot2 (Wickham, 2016).

Finally, we constructed networks that illustrate the shortest pathways between teacher factors and student motivation in the majority and minority groups, which allows for clear identification of possible pathways of influence from one node to another and mediating nodes in between (Brandes, 2008; Isvoranu et al., 2016). In other words, these pathways highlight the most efficient ways a node connects to another node. Hence, our shortest pathways answer the question “what is the most efficient route to take in order to reach student motivation from teachers’ multiculturalism (i.e., teachers’ reaction to victimization and level of multicultural education items)?” The shortest pathways between any two nodes depend on the distance needed to go from one to the other as well as their connection’s strength, which is computed using Dijkstra’s algorithm (Dijkstra, 1959).

**An Exploration of Between Class Effects**

As it is not (yet) possible to estimate student and class-level variables in one network, variables that might moderate the strength of estimated relations such as ‘ethnic minority percentage in class’ were not included in the comparative network analyses. Previous analysis of the same data shows, for instance, that Dutch children were less, and Turkish and Moroccan children were more likely to report ethnic victimization when there is a higher Dutch children proportion in their classrooms (Verkuyten & Thijs, 2002). To overcome this limitation, we estimated a second network structure on class-level variables. In this analysis, student-level variables were averaged per class. Thus, in this class-level network, nodes represent either averages of student-level variables for each class or class-level variables.

Because at the class-level ethnicity is no longer categorical (every class has a different ethnic composition), we could not split the class-level data on ethnicity as was done in the student-level analysis. Instead, we added the class-level variable ‘class composition’ as a node to our analysis, which represents the composite percentage of students with Turkish and Moroccan backgrounds (i.e., our ethnic minority group).
Results

Network Analysis and Comparison

Each node in our networks indicates a single item. Items are color-coded to indicate which scale they belong to (see Table 2 for item descriptions). We compared the similarities in the basic structure of the two samples, how densely their networks are connected (connectivity), and the individual connections of the two groups’ networks (van Borkulo et al., 2015).

The results indicate same level of connectivity for majority and minority student networks ($p = .09$), but significant differences in terms of the network structures ($p = .006$). In other words, nodes are connected at a similar density in both groups, however the networks are not identical due to the presence or difference in strength of certain connections. The network structures (Figure 1) of both groups illustrate that the nodes that are specifically strongly connected (and that do not belong to the same measure) seem to be similar in both networks; the differences in connections between (i) teachers’ multiculturalism and motivation, (ii) teachers’ multiculturalism and peer relationships, and (iii) peer relationships and motivation are discussed below.

Teachers’ multiculturalism (i.e., teacher reactions to victimization and level of multicultural education) is directly and indirectly connected to all student variables. To start with, items from teacher reactions to victimization have many direct and indirect connections with the motivation items. Especially being able to report an incident of discrimination to the teacher ($TR3$) seem to be very well connected to almost all motivation items in both groups ($TR3 – M1, TR3 – M2, TR3 – M3$ in the majority group; and $TR3 – M1, TR3 – M2, TR3 – M3, TR3 – M4$ in the minority group). However, a more salient teacher reactions item is the extent to which teachers react to acts of discrimination ($TR1$), which has a strong direct connection with eagerness for new information in the majority group ($TR1 – M3$) and a strong connection with getting along with others in the minority group ($TR1 – II$). To continue, items from level of multicultural education similarly have direct and indirect connections with the motivation items in both groups; however, there are more direct and salient connections in the minority group network. The connections that stand out within the minority network are the ones between teacher talking about different customs and eagerness for assignments, and teacher talking about fairness to ethnic others and liking to learn ($ME2 – M2, ME4 – M1$ respectively).

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9 This is a result after 5,000 iterations.
## Table 2
*Items of the Student Measures and Their Assigned Colors and Labels*

<table>
<thead>
<tr>
<th>Measure</th>
<th>Item Label</th>
<th>Domain Color (In pastel)</th>
<th>Item Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Multicultural Education</td>
<td>ME1</td>
<td></td>
<td>Teacher talking about different cultures</td>
</tr>
<tr>
<td></td>
<td>ME2</td>
<td>Green</td>
<td>Teacher talking about different customs</td>
</tr>
<tr>
<td></td>
<td>ME3</td>
<td></td>
<td>Teacher talking about being good to ethnic others</td>
</tr>
<tr>
<td></td>
<td>ME4</td>
<td></td>
<td>Teacher talking about fairness to ethnic others</td>
</tr>
<tr>
<td></td>
<td>TR1</td>
<td></td>
<td>Teacher reacting to discrimination</td>
</tr>
<tr>
<td></td>
<td>TR2</td>
<td></td>
<td>Children reacting to discrimination</td>
</tr>
<tr>
<td>Perceived Teacher Reactions to Victimization</td>
<td>TR3</td>
<td>Sea green</td>
<td>Reporting an incident of discrimination to the teacher</td>
</tr>
<tr>
<td></td>
<td>TR4</td>
<td></td>
<td>Other children reporting an incident of discrimination to the teacher</td>
</tr>
<tr>
<td>Motivation</td>
<td>M1</td>
<td></td>
<td>Liking to learn</td>
</tr>
<tr>
<td></td>
<td>M2</td>
<td>Red</td>
<td>Eagerness for assignments</td>
</tr>
<tr>
<td></td>
<td>M3</td>
<td></td>
<td>Eagerness for new information</td>
</tr>
<tr>
<td></td>
<td>M4</td>
<td></td>
<td>Desire to know a lot</td>
</tr>
<tr>
<td>Non-ethnic victimization</td>
<td>NEV1</td>
<td>Orange</td>
<td>Non-ethnic name-calling in school</td>
</tr>
<tr>
<td></td>
<td>NEV2</td>
<td></td>
<td>Non-ethnic social exclusion in school</td>
</tr>
<tr>
<td>Individual Ethnic Victimization</td>
<td>IEV1</td>
<td></td>
<td>Ethnic name-calling in school</td>
</tr>
<tr>
<td></td>
<td>IEV2</td>
<td>Purple</td>
<td>Ethnic social exclusion in school</td>
</tr>
<tr>
<td>Ethnic Peer Group Victimization</td>
<td>EPGV1</td>
<td></td>
<td>Ethnic peer group name-calling in school</td>
</tr>
<tr>
<td></td>
<td>EPGV2</td>
<td>Pink</td>
<td>Ethnic peer group exclusion in school</td>
</tr>
<tr>
<td>Social Integration</td>
<td>I1</td>
<td>Yellow</td>
<td>Getting along with other children</td>
</tr>
<tr>
<td></td>
<td>I2</td>
<td></td>
<td>Liking to play with other children</td>
</tr>
<tr>
<td></td>
<td>I3</td>
<td></td>
<td>Other children disliking you (R)</td>
</tr>
<tr>
<td></td>
<td>I4</td>
<td></td>
<td>Difficulty making friends (R)</td>
</tr>
<tr>
<td>Ethnic Identity</td>
<td>EI1</td>
<td>Blue</td>
<td>Liking being part of the ethnic group</td>
</tr>
<tr>
<td></td>
<td>EI2</td>
<td></td>
<td>Important to be part of the ethnic group</td>
</tr>
<tr>
<td>Class Composition</td>
<td>CC</td>
<td>Dark red</td>
<td>Minority group concentration within the classrooms</td>
</tr>
</tbody>
</table>

*Note.* The variable ‘class composition’ is only present in the *Between Class Effects Network* and represents the percentage of minority group children with a Turkish and Moroccan background.
Figure 1
Networks Depicting the Item Partial Correlations for the (a) Majority and (b) Minority Ethnic Groups Respectively

(a) Majority Group

(b) Minority Group

Note. Item groups are differentiated by colors. Thicker and darker edges represent stronger connections (green and red edges represent positive and negative connections respectively).
In addition, we see direct connections between teachers’ multiculturalism and peer relationships (e.g., TR2 – I2, TR1 – I1, TR1 – IEV2, ME1 – I2). In both groups, the teachers’ multiculturalism has positive and direct connections with the integration items. In addition, the connections we observe between teacher reactions and victimization items are negative, whereas the ones between multicultural education and victimization are positive (e.g., ME4 – IEV2 in the majority, ME4 – NEV1 in the minority group).

The direct connections between peer relationships and motivation items are salient in both networks. We observe positive connections between getting along with and liking to play with other children, and desire to know a lot (I – M4; I2 – M4 respectively) in the majority network; and, positive connection between getting along with other children and desire to know a lot (I1 – M4) in the minority network. Moreover, we observe negative direct edges between ethnic victimization by name-calling at the individual level, and eagerness for new information and desire to know a lot (IEV2 – M3, IEV2 – M4 respectively) in the majority group; and between ethnic victimization by name calling at the individual level and eagerness for new information (IEV2 – M3) in the minority group. It is notable that in the minority group network, integration items are more connected with the motivation items compared to the victimization items; whereas, connectivity is similar for integration and motivation, and victimization and motivation items in the majority group network.

**Centrality Analysis**

The centrality measure ‘strength’ shows a similar pattern of results in both groups, which is expected given the same level of connectivity across the two networks. The other centrality indices indicate that teacher reacting to discrimination (TR1) and reporting discrimination to teacher (TR3) for the majority group, and getting along with the other children (I1) and ethnic victimization by name-calling at the individual level (IEV1) for the minority group (Figure 2) show the highest centrality in their represented order. This suggests that these are important nodes in their corresponding networks, because they are very well connected to the other nodes. Therefore, they have the potential to have the largest influence on other nodes in their networks. The centrality indices are regarded as interpretable based on the accuracy and stability analyses (see Supplementary Material Figures S4 and 5).

**The Shortest Paths Analysis**

In order to map out the most efficient pathways of influence, the shortest paths between teachers’ multiculturalism and student motivation were investigated for the two groups. Mapping these pathways can help teachers determine the specific multicultural strategies that can be the most effective in motivating students with different experiences and needs. Figure 3a illustrates the shortest pathways in the majority group. To reach most of the motivation items from multicultural education, connections go through teacher reacting
to discrimination (TR1); and from teacher reactions, they go through teacher reacting to discrimination (TR1) or reporting on discrimination to teacher (TR3). Figure 3b illustrates the shortest pathways in the minority group. The shortest route to reach most of the motivation items from multicultural education is via teacher talking about different customs (ME2) and teacher talking about fairness to ethnic others (ME4); the route to reach the motivation items from teacher reactions is via reporting on discrimination to teacher (TR3) but also via the integration item getting along with others (I1) that connects to eagerness for assignments (M2) and M4 (‘desire to know a lot’).

**Figure 2**

*Centrality Plot for the Majority (in orange) and Minority (in blue) Group Networks*

Note. Centrality measures are shown as standardized z-scores. For the raw centrality indices, please see Supplementary Tables S1 and S2.
We can clearly see that the shortest pathway between teachers’ multiculturalism and student motivation is not mediated by items from another measure in the majority group network; whereas, in the minority group network, it seems to be mediated by the integration item getting along with other children (I1). More specifically, teacher reacting to discrimination (TR1) directly connects to motivation in the majority group. In the minority group, it directly connects to whether children themselves react if they are discriminated (TR2), which in return connects to motivation items via the integration item getting along with other children (I1).

Moreover, in the majority group, multicultural education connects to motivation only via the teacher reactions item teacher reacting to discrimination (TR1). In the minority group, we observe direct connections between multicultural education and motivation items, and more direct connections from teacher reactions item reporting an incident of discrimination to the teacher (TR3) to various motivation items, highlighting the importance of cultural sensitivity and teachers’ perceived approachability for the minority group students.

The centrality measure betweenness was regarded as interpretable based on the accuracy and stability analyses for both the ethnic majority and the ethnic minority group networks (see Supplementary Material Figures S4 and S5). As described above, this measure is mostly informative on the mediating role of items, as well as shortest paths. Of note, however, the stability of shortest paths cannot be tested directly.
Between Class Effects Network

We constructed a between-class effects network as we were interested in the influence of the class-level variable ‘classroom composition’. Therefore, we only examined the direct connections between ‘classroom composition’ and other nodes. There are rather weak direct connections between classroom composition and teacher talking about fairness to ethnic others (ME4), ethnic victimization by exclusion at the individual level (IEV2), and at the peer group level (EPGV1), and by name-calling at the peer group-level (EPGV2); and stronger connections with liking to learn (M1), liking being part of the ethnic group (EI1), and important to be part of the ethnic group (EI2).

Discussion

The current study provides a first application of the network approach to educational research, with the aim of mapping out multicultural classroom dynamics in primary school classrooms. Our findings highlight the importance of a multicultural approach for both ethnic majority and minority students’ motivation. The main differences between the two student-group networks were the more direct connections peer relationships had in the minority
Chapter 2

group network with teachers’ multiculturalism and motivation. We discuss our findings in the following by comparing the connectivity within the two student group networks in terms of the relations between (i) teachers’ multiculturalism and motivation, (ii) teachers’ multiculturalism and peer relationships, and (iii) peer relationships and motivation; the centrality indices; shortest pathways; and lastly by tapping on the between class effects network results.

**Network Analysis and Comparison**

Our comparative approach indicates that the mechanism through which teachers’ multiculturalism influences student motivation might depend on different aspects of teacher factors for different ethnic groups. Both majority and minority group children seem to appreciate a tolerant atmosphere and approachability in their peers and teachers. We see, however, a stronger cultural aspect to this appreciation in minority group children. To explicate, while teachers’ approachability and the extent to which they react to acts of discrimination have positive connections with both majority and minority group children’s motivation, perhaps due to its general content on victimization (e.g., promoting tolerance), teachers’ level of multicultural education seems to have stronger direct connections to minority children’s motivation due to its apparent relation with culture. The more frequently teachers engage in multicultural education, the more motivated children are, especially children with an ethnic minority background.

Teachers’ multiculturalism is also directly connected to peer relationships for both ethnic groups of children. The more teachers react to discrimination (TR1), the less children report experiencing victimization (IEV1). However, children seem to report more experiences of victimization when their teacher talks more about fairness to ethnic others (ME4), which is especially the case for the ethnic minority group children. This signals that teacher reactions to victimization might have a positive effect on the frequency of ethnic name-calling and exclusion, and multicultural education might increase awareness, and knowledge on fairness and negative forms of behavior, as initially suggested by the results of previous analyses on the data (Verkuyten & Thijs, 2002). Alternatively, teachers might talk more about fairness to ethnic others due to the high reported ethnic victimization rates.

In addition, these peer relationships are very well connected with motivation in both networks. For both groups, victimization had a negative and integration had a positive relationship with motivation, while it is notable that integration items are better connected with motivation items compared to victimization items within the minority group network. This finding highlights the psychological need to relate to others and its importance for motivation (see e.g., Self-Determination Theory; Deci & Ryan, 1985).
Exploring Multicultural Classroom Dynamics: A Network Analysis

**Centrality Analysis**

The results of the centrality analyses were in line with the findings detailed above, such that teachers’ possible influence within the networks was very salient. If they are targeted, central nodes can have a high impact on their corresponding networks as they are very well connected to the rest of the variables. Our centrality analyses showed that teachers’ approachability when someone is discriminated against (TR3), and their constructive reaction (TR1) have the potential to have a high impact on the majority group network and reinforce positive outcomes. In the minority group network, getting along with others (I1) and ethnic victimization by name-calling (IEV1) seem to be fulfilling this important function, which are still directly and strongly connected to the central nodes of the majority group network.

**The Shortest Paths Analysis**

In addition, by computing shortest pathway networks, we displayed how to possibly most efficiently reach student motivation from teachers’ multiculturalism. Due to the strength of connections and the distance one needs to travel from one node to the other, certain pathways were estimated to be the most efficient routes that an effect would spread in the corresponding networks. In the majority group network, the most efficient ways to influence student motivation are through influencing teachers’ approachability (TR3), and the extent to which they would react to acts of discrimination (TR1). Likewise, in the minority group network, teachers’ approachability (TR3) seems to be a very efficient way to influence many aspects of motivation. In addition to similar pathways the majority group network, however, it seems possible to positively influence motivation through talking about different customs and being fair to ethnic others in the minority group network, which are aspects of multicultural education. Most importantly, it seems possible to efficiently increase minority student motivation with a multicultural approach via improving how students get along with each other (I1). This seems possible through, again, influencing teachers’ approachability and the extent to which he/she would react to acts of discrimination (TR1, TR3). Therefore integration appears to mediate the predictive relationship between teacher reactions to victimization and motivation in the minority group (Isvoranu et al., 2016).

Next to our main networks, we have estimated a network of between class effects in order to better account for the multilevel nature of our data. Our results suggest that on average, in classes where there is a higher minority concentration, teachers talk more about fairness to ethnic others (ME4), and children report higher levels of individual and peer-group ethnic victimization (i.e., IEV2, EPGV2 and EGV2). This finding is in line with our network comparison results and results from previous analyses on the data using a multilevel approach (Verkuyten & Thijs, 2002) where minority children report more ethnic victimization when their teacher talked more about fairness to ethnic others (ME4), suggesting that multicultural education increases awareness, and knowledge on fairness and negative forms of behavior. Alternatively, there might be more ethnic victimization instances reported...
in these classrooms due to the higher number of ethnic minorities. As such, teachers may feel the need to talk more about fairness to ethnic others due to the number of reported student experiences. Unfortunately, however, this finding also signals that teachers might not put too much emphasis on multiculturalism within classrooms where there aren’t many children from minority backgrounds.

In these classrooms, moreover, children report higher levels of liking of and importance for being part of their ethnic group (ethnic identity items EI1 and EI2), and liking to learn (M1). Self-categorization as a group member can lead to self-stereotyping (Hogg & Turner, 1987), and the social groups minority children belong to are often associated with negative stereotypes by the ethnic majority (Brown & Bigler, 2002). A relatively larger in-group size can therefore promote more positive self-evaluations for minorities by decreasing negative self-stereotyping. Furthermore, larger in-group size can protect against ethnic victimization (Verkuyten & Thijs, 2002) and offer more opportunities for developing a sense of ethnic group belongingness (Leonardelli & Loyd, 2016). Therefore, it is reasonable to argue that higher ethnic minority concentration can promote higher levels of liking of and belongingness to the ethnic group. As noted earlier, students who feel socially accepted and supported by their peers, in turn, are more likely to be motivated to engage in learning activities (Deci & Ryan, 1985; Wentzel, 2009), findings that are in line with our results.

Considering the pattern of findings, one can arrive at a tenable conclusion considering proximate (immediate) and distal (main) explanations of students’ experiences. It is plausible that teachers’ multicultural approach constitutes the underlying distal (main) factor of influence over student motivation for both groups, stimulating a positive classroom climate in which students operate (e.g., tolerance). A multicultural approach goes hand in hand with tolerance, acceptance, respect, and affirmation (Nieto, 2002). As it could be expected based on previous literature, students are more motivated in learning environments that are familiar (e.g., culturally) and friendly rather than strange and hostile (Gay, 2003), which can explain why a multicultural approach seems to be beneficial for both groups of students that were included in our analyses.

However, because victimization and social integration are more salient for the minority group children (i.e., central and on the shortest pathway), social integration might constitute a more proximate (more immediate) and direct factor of influence over their motivation compared to teachers’ multiculturalism. Given the frequency with which ethnic minority students are victimized (Verkuyten et al., 1997), and the psychological distress that has been found to be caused by negative interactions like peer victimization (e.g., Wentzel & Caldwell, 1997), it is not unreasonable that peer relationships would dominate students’ classroom experiences. Indeed, social interactions with peers have been previously found to shape children’s learning processes (Urdan & Schoenfelder, 2006), the quality of which are especially important for students’ motivational outcomes (Ryan & Patrick, 2009) that is shaped and maintained by the rules, norms, and behavioral guidelines created by the teachers (Jennings & Greenberg, 2009).
Our findings, however, should be evaluated with caution. Even though these paths highlight potential pathways of influence (Pearl, 2000), our results do not allow for conclusions about causality or directionality as we used cross-sectional data. Therefore, we regard these findings as hypothesis generating and argue that more research is needed in order to directly test such a mediation model as the one described above.

**Strengths**

Taken together, we have confidence in the generalizability of our study results. The data we analyzed were originally gathered for a large-scale nation-wide study, providing us with a very large sample size (\( N = 3,806 \)). In our networks, the strength of link between two nodes is a parameter estimated from the data, the accuracy of which rises with increasing sample size (Epskamp & Fried, 2016). Accuracy checks, as reported in the supplementary materials (see Supplementary Figures S2-7), also showed a high accuracy and stability in the network structures as well as centrality indices; therefore, low susceptibility to sampling variation. Finally, next to expanding their results, our findings were in line with those of the initial analyses by Verkuyten and Thijs (2002), which is reassuring for our claims that the network approach offers a reliable and time effective tool for exploring data.

**Limitations**

As with all research, our study is not without its limitations. First, the data were based on self-report measures and thus might be prone to bias (e.g., demand characteristics, social desirability) especially in relation to sensitive topics as multicultural education and ethnic victimization. Yet, self-reports are suggested to be based on the most valid information available when measuring internal psychological processes (Praetorius, Koch, Scheunpflug, Zeinz, & Dresel, 2017). Moreover, alternative methods such as ethnographic studies (e.g., observation, interviewing) do not reach such great sample sizes due to high resource consumption, which is an important consideration for network analysis.

Second, the psychometric network approach has only recently been gaining popularity (e.g., research on psychopathology) and thus is still early in its development. A major current limitation to psychometric networks is that it is currently hard to estimate network models while taking multilevel nature of the data into account, especially when aiming to use regularization techniques for model selection (Epskamp et al., 2016). To overcome this limitation, we explored a new method that visualizes between-classroom variance, which also includes a class-level variable ‘class composition’. Further methodological work is needed to flesh out network estimation in such complicated multilevel structures. In addition, the

10 Yet, based on theory, it makes sense to interpret the direction of the connections. It is, for instance, not very plausible to say that because children are more motivated, they are victimized less. It makes more sense to interpret the directionality of the connection such that because children are victimized less, they are more motivated.
LASSO regularization used in this paper has been shown to retrieve network structures well when the true model is sparse (i.e., contains a limited number of edges; Foygel & Drton, 2010), but might perform poorer when the true network structure is not sparse (Epskamp, Kruis, et al., 2017). Furthermore, future research should aim to replicate these results in new samples (Open Science Collaboration, 2015), especially considering the novelty of the methodology. While network architecture has been demonstrated to replicate well, descriptive statistics such as centrality indices may be more prone to differ between samples (Borsboom et al., 2017; Fried et al., 2018; van Loo et al., 2017). Moreover, further developments in bootstrapping are needed, such as investigating the stability of shortest pathways.

Finally, our results were based on a Dutch primary school sample. While our accuracy checks (Supplementary Figures S2-7) indicate our results’ low susceptibility to sampling variation, we acknowledge that this generalizability might still be limited to Dutch primary schools.

**Directions for Future Research**

Follow-up studies may benefit from overcoming the current shortcomings and map out the multicultural classroom interactions in different settings; thus, increasing the prevalence and quality of the application of the *psychometric network* framework to educational research. Importantly, prospective research should directly test the generated mediation hypothesis, which could be done by using structural equation models (SEM) or directed network models (for similarities and differences between the two, see Epskamp, Rhemtulla, & Borsboom, 2017). Similar to SEM, directed networks contain edges with an arrowhead in one end, indicating a one-way effect (as opposed to a mutual relationship), and can be used to depict causal structures (Pearl, 2000).

In addition, expending the research to include not only student perceptions on their peer relationships but also relationships with their teacher might be fruitful. There is evidence indicating that students who have confidence in their teacher in times of stress and need (e.g., victimization) report having high closeness and emotional security levels with their teachers (Zee & Bree, 2017), which in return is beneficial for their classroom engagement and educational performance (for a meta-analysis see Roorda, Koomen, Spilt, & Oort, 2011).

Lastly, future investigators can construct separate networks for teacher and student views as teachers consistently perceive their classrooms’ climate more positively than their students, a phenomenon called “the rose-colored glasses” (Hofman et al., 2001). Comparison of such networks could give us insights as to where teachers might need to reassess their perceptions to better fulfill the needs of a diverse student body.

**Implications for Education**

While support for multiculturalism and multicultural policies are showing modest increases in most parts of Europe (Banting & Kymlicka, 2013), more often than not, teachers
perceive the application of these practices as an additional “burden” to their everyday practices and curriculum (Gay, 2003). This is either due to not receiving any training as to how they can respond to diversity in their classrooms or not being completely convinced of the benefits of a multicultural approach (Verkuyten & Thijs, 2013). Our results, however, show how important a multicultural approach is for peer relationships and student motivation. More specifically, our findings signal the need to not only ensure non-victimization in the classrooms but also to better reflect the unique needs of minority students and to promote positive relationships by engaging in multicultural educational practices (Banting & Kymlicka, 2013).

The insights gained from our network analyses can be used to inform professional learning programs around diversity that would communicate the benefits of a multicultural approach, and would empower and motivate teachers to be more mindful of creating and maintaining positive and fair peer relationships. These professional learning programs can target the most central nodes in the networks, and/or the edges that are on the shortest pathways of influence over student motivation. Targeting these would be the most efficient ways to influence many aspects of the classroom dynamics at once.

Based on our findings, targeting the central nodes and/or the edges on the pathways calls for increasing teacher approachability about acts of victimization, the extent to which they interfere with these acts, the extent to which they explicitly communicate that fairness towards people that are culturally and/or ethnically different is important, and enhancing social integration, of especially ethnic minorities, with their class-group. Therefore, professional learning opportunities could benefit from including lessons on, for instance, exhibiting more approachable body and facial expressions (Willis et al., 2011), familiarizing oneself on emotional display rules of different cultures to better read social situations (Fischer & Manstead, 2008), engaging in role-playing in order to increase perspective taking abilities (Stephan & Finlay, 1999), incorporating cultural issues into instruction (Gay, 2003), and increasing contact between groups to reduce prejudice and increase integration (Allport, 1954).

**Conclusion**

To the best of our knowledge, the current study is the first to apply the *psychometric network* approach to educational research. This approach allowed us to explore the specific aspects of classroom interactions that relate to students’ motivation. Our study’s comparative nature yielded different possible pathways of influence from teachers’ multicultural approach to student motivation for different ethnic groups of children. Our results speak to the need for further understanding the relationship between the two challenges minority children experience, namely social integration and educational achievement.
The current study examined the relationship between teachers’ prejudice reduction practices, focusing on dialogue about issues around diversity, and their students’ engagement. We additionally investigated the potential moderation of this relationship by teachers’ explicit multicultural attitudes and implicit attitudes towards ethnic minorities. Our multilevel models using 35 primary school teachers and 711 students showed that for teachers who reported above-average multicultural attitudes, prejudice reduction was positively associated with student engagement. Our results suggest that these teachers might not only promote multiculturalism as an abstract ideal, but they actually “walk the talk” and hence can improve educational lives of their students.

This chapter is based on:

CHAPTER 3

Practice What You Preach: The Moderating Role of Teacher Attitudes on the Relationship between Prejudice Reduction and Student Engagement
As a consequence of non-European immigration from the 1960s, schools and classrooms in Western Europe have become increasingly culturally and ethnically diverse (Phalet et al., 2004). This cultural and ethnic diversity has brought new challenges for both students and teachers. Today, schools continue to be sites of intercultural tension (Thijs et al., 2014) and educational achievement of ethnic minority students still lags behind that of their ethnic majority peers (OECD, 2014). This emphasizes a need to investigate factors that may help explain the unfavorable educational position of these students (Phalet et al., 2004). In the current study, we investigate teachers’ prejudice reduction in the classroom as one factor that can improve students’ educational position through increasing student engagement. Moreover, we investigate whether teachers’ attitudes towards multiculturalism and ethnic minority outgroups might moderate this relationship.

Dovidio and colleagues (2010) defined prejudice as an attitude reflecting an overall evaluation of a group. Prejudice is often used in combination with similar concepts, namely stereotypes and discrimination. While prejudice is used to refer mainly to dispositions to behave negatively toward a group and its members, stereotypes refer to a set of characteristics ascribed to individuals based on their perceived group membership, and discrimination refers to the actual biased behavior towards individuals perceived to be belong to a certain group (Dovidio et al., 2010). Prejudice, stereotyping, and discrimination thus form different aspects of intergroup bias, and play a crucial role in the everyday educational experiences of ethnic minority students (Steele, 1997; Zirkel, 2004). These everyday experiences may include perceptions of cohesion, mutual respect, supportive relationships, and perceived fairness from teachers and peers. A positive experience of the classroom’s social environment, in turn, has been consistently associated with adaptive motivational beliefs and achievement behaviors, and can have an influence on student engagement (Ryan & Patrick, 2001; Urdan & Schoenfelder, 2006; Velayutham & Aldridge, 2013).

Indeed, among the most notable factors influencing student engagement are the characteristics of the immediate learning environment (Furrer & Skinner, 2003; Velayutham & Aldridge, 2013). Student engagement, referring to the intensity and emotional quality of involvement with active, goal-directed, and persistent participation in the learning environment (Skinner, Furrer, Marchand, & Kindermann, 2008), has been consistently linked to positive student outcomes such as increases in learning, educational attainment, and achievement (Vollet et al., 2017). Confronting and challenging intergroup bias in the classroom through prejudice reduction may therefore improve the educational experiences of students.

Prejudice reduction, described by Banks (2004) as one of the five key dimensions of multicultural education, is an umbrella term referring to deliberate attempts to reduce prejudice, stereotyping, and discrimination, and to develop positive attitudes between different ethnic and cultural groups. Although the effects of such intergroup bias on student functioning has received some attention (e.g., school performance, physical health, mental health; Camicia, 2007), the direct positive relationship between prejudice reduction efforts...
and student engagement has not yet been studied. In the current research, we study prejudice reduction that focuses on engaging in dialogue about issues around diversity and confronting intergroup bias.

The success of such attempts can be influenced by the teachers’ worldviews that are either consciously expressed or more automatically communicated (Vezzali, Giovannini, & Capozza, 2012). We therefore also investigate the role of teachers’ attitudes in the current study. Attitudes are defined as tendencies to evaluate and respond to objects, people, issues or situations in a specific manner (Rokeach, 1968). A mismatch between expressed attitudes and behavior, or subtle signals of social biases may hamper the efforts to reduce intergroup bias (Byrnes et al., 1997) by possibly damaging the perceived authenticity of the teacher (Kreber, 2010). Attitudes are usually discussed with a distinction made between explicit and implicit attitudes. Explicit attitudes are evaluative judgments that are not automatic but effortful, more consciously controlled, and reflective of behavioral intentions that can be reported (Greenwald et al., 1998). Implicit attitudes, on the other hand, are attitudes that people are not initially aware of, difficult to monitor, and are automatically activated whenever the attitude object is present (Greenwald et al., 1998). In the current study, we specifically focus on teachers’ explicit multicultural attitudes – familiarity with and sensitivity to issues of cultural pluralism, and awareness of one’s own biases (TMAS; Ponterotto, Baluch, Greig, & Rivera, 1998); and, implicit attitudes towards ethnic minorities – strength of associations between an ethnic outgroup and valence attributes (Greenwald, McGhee, & Schwartz, 1998).

Our research is guided by the following questions: 1) Are teachers’ prejudice reduction practices associated with students’ engagement? and 2) To what extent do teachers’ explicit multicultural attitudes and implicit attitudes towards ethnic minorities moderate this relationship?

**Prejudice Reduction as a Dimension of Multicultural Education**

Multiculturalism depicts the need to endorse cultures of all groups (e.g., religious, ethnic, racial), to challenge prejudice, stereotyping, and discrimination, and to ensure that all students have equitable educational opportunities and access to knowledge regardless of their cultural backgrounds (Banks, 2004a; Morrison et al., 2008; Okoye-Johnson, 2011). To effectively implement the wide range of multicultural practices in educational contexts, we need a comprehensive conceptualization and clearly outlined dimensions (Banks & Banks, 1995). For this study, we use Banks’ widely used conceptualization of multicultural education as it is detailed and encompassing (Zirkel, 2008).

Banks (2004) delineates five dimensions that are key to the characterization of multicultural education, namely 1) content integration—creating a curriculum that includes materials from a variety of cultures and groups; 2) knowledge construction—creating an understanding and awareness of how implicit cultural assumptions, frames of reference, and perspectives shape the ways in which knowledge is constructed, identified, and interpreted;
3) prejudice reduction—working for reducing prejudice, stereotyping, and discrimination, and developing positive attitudes; 4) equity pedagogy—teaching strategies facilitating educational achievement of students from diverse groups, and therefore creating better equity between students; and, 5) empowering school culture—transforming the classroom and school culture and processes in ways that eliminate institutionalized discrimination, and allow all students to experience educational equality and cultural empowerment.

Multicultural education is designed to improve classrooms and schools in ways that will enhance intergroup relations and increase educational achievement of students with a minority background (Zirkel, 2008). Among the five dimensions, content integration has been the most widely researched in relation to student functioning. Studies report that when the curriculum includes references to students’ cultural backgrounds and lives (e.g., languages, histories, issues like discrimination), students feel more valued and intellectually competent (Bean, Valerio, Senior, & White, 1999; Center, 2005; Gay, 2003; Sleeter, 2011). Consequently, they are more engaged, and perform significantly better in various skills such as language and literacy (Cummins, 2015; Sleeter, 2011). The aspects of multicultural education that extend beyond curriculum and instruction and tap everyday interactions have been suggested to have an even more direct effect on personal experiences of students (Crystal, Killen, & Ruck, 2010; Verkuyten & Thijis, 2013); hence, can be at least equally effective in promoting student engagement. Yet, these aspects have received little attention. A more systematic and quantitative investigation of prejudice reduction dimension of multicultural education, therefore, can be fruitful especially because informal prejudice reduction practices are the least dependent on institutional and contextual determinants, and can be largely initiated by teachers themselves.

The aim of prejudice reduction is to promote positive and inclusive intergroup attitudes and relationships between students of different ethnic and cultural backgrounds. In our study, we focus on practices that include engaging in dialogue about issues around diversity wherein teachers actively confront prejudice, stereotyping, and discrimination. Prejudice reduction requires teachers to point out biases whenever they encounter them during school interactions or discussions of school material. It is suggested that, in situations where students express prejudice, stereotype or engage in discriminatory behavior, teachers should not overlook the problem but should take it as an opportunity to address the underlying reasons behind the problems in order to avoid similar instances in the future. Teachers should also avoid a simplistic approach to diversity that limits multiculturalism to celebration of holidays and food, but should motivate their students to engage in rich conversations around their cultures and experiences (Sleeter & McLaren, 2009).

With less intergroup bias, students can concentrate and dedicate more time and resources to learning, rather than diverting their time with ethnically-based threats and quarrels (Okoye-Johnson, 2011). Previous studies examining the association between multicultural education and inter-ethnic attitudes and intergroup processes report that
Prejudice reduction practices positively influence outgroup evaluations and interethnic attitudes, and decrease interethnic biases and perceptions of peer discrimination (e.g., Thijs & Verkuyten, 2013). Teachers’ encouragement of positive student interactions and promotion of mutual respect in the classroom improves students’ feelings of psychological safety and comfort, and lowers academic anxiety (Goodenow, 1993). Accordingly, students may have higher self-efficacy beliefs and academic self-concept, are likely to hold higher expectancies for their educational success, and therefore show higher levels of interest and enjoyment in learning activities (Ryan & Patrick, 2001).

Failing to address intergroup bias, on the other hand, can not only have overt negative outcomes, such as bullying and other types of victimization (Rigby, 2004), but can also have more covert harmful effects on students (Fiske, 2002). An example phenomenon is stereotype threat described by Steele (1997), which refers to a decline in performance due to perceived attitudes and stereotypes in relation to one’s group’s expected performance in a school subject. These biases are significant set-backs for educational functioning as they disturb the learning environment (Byrd & Chavous, 2009; Ryan, 2003). They can lead students to disengage from school, school-related people, and activities, so that they distance themselves from the prejudicial aspects of the school. This could be adaptive by protecting the students from negative self-evaluation, but it can also be harmful in undermining their motivation to engage in learning activities (Camicia, 2007; Steele, 1997). Prejudice reduction practices might therefore mitigate the setbacks that are generated by intergroup bias.

**Interaction of Prejudice Reduction with Teacher Attitudes**

Many teachers are advocates of equitable educational opportunities and hence multiculturalism; however, their actual teaching practices may not always be optimal and might show shortcomings (Reupert et al., 2010). For instance, teachers were reported to find it hard to discuss sensitive topics such as racism and discrimination; and to endorse unconscious biased attitudes that can be expressed in subtle, non-verbal behaviors outside of their control (Vezzali, Giovannini, & Capozza, 2012). Alternatively, although teachers might feel obligated to engage in multicultural teaching practices due to their school’s institutional policies, these practices may not be in line with their own worldviews and self-concepts. Hence, teachers may communicate different values through their daily interactions, either deliberately or automatically (Vezzali et al., 2012). In our study, we try to account for teachers’ attitudes, as the extent to which teachers’ prejudice reduction efforts succeed may depend on whether or not their attitudes are in line with what they aim to promote in their students (Byrnes et al., 1997).

Specifically, we focus on teachers’ explicit multicultural attitudes and implicit attitudes towards ethnic minorities. Teachers who report more positive multicultural attitudes are more aware of their students’ cultural background and their own socialization biases, value diversity as an asset, address multicultural issues in the teaching process, and they were
found to be more effective in their prejudice reduction efforts (Ponterotto & Pedersen, 1993). While assessment of explicit attitudes may capture people’s beliefs or knowledge, assessment of implicit attitudes may capture people’s formed associations between attitude objects and their evaluations that may be expressed in subtle ways (Strack & Deutsch, 2004). These implicit attitudes may have been developed, for instance, by repeated exposure to negative outgroup portrayals displayed through the mass media (van Dijk, 2015). Implicit attitudes towards ethnic minorities can affect teachers’ perceptions of and judgments regarding the members of the outgroup (Olson & Fazio, 2009). They can also guide spontaneous behavior especially in daily interactions: implicit attitudes might surface as negative non-verbal behaviors such as avoidant posture, less eye contact, and increased social distance (Dovidio et al., 2002).

**Student Engagement in the Classroom**

Engagement refers to a multidimensional construct, involving both emotional and behavioral dimensions. Emotional engagement reflects the presence of positive emotions (e.g., interest) and absence of negative emotions (e.g., anxiety, frustration), and the motivation to be involved in a task. Behavioral engagement reflects how much attention, effort, and persistence the student shows in the initiation and execution of a learning activity (Skinner et al., 2008).

Student engagement is considered important for students’ educational functioning as it improves learning, academic progress, positive expectations about one’s own academic abilities, and achievements (Hughes et al., 2012; Ladd & Dinella, 2009). Engagement has also been shown to not only predict short-term educational achievement, but also long-term positive outcomes such as pleasure in work and ability to exert effort on work-related activities (Steinberg, Elmen, & Mounts, 1989), and capacity and motivation to take on challenges in general (Harter, 1996). Moreover, engaged students seem to be favored in social situations by receiving more positive reciprocal reactions and motivational support from their teachers (Skinner & Belmont, 1993).

Prejudice reduction works towards improving interethnic attitudes, intergroup relations, and peer relationships, which are part of an immediate learning environment that facilitates emotional and behavioral engagement. A cognitive component to engagement is also defined in the literature, reflecting efforts and approaches in learning, acquiring knowledge, and mastering skills promoted by education (Newmann et al., 1992). However, prejudice reduction primarily relates to emotional and behavioral components. Fredricks, Blumenfeld, and Paris (2004) report in their review that acceptance by peers increases school satisfaction, whereas rejection lowers school interest. Both are aspects of engagement that pertain to its emotional component. Similarly, acceptance by peers increases efforts put in learning activities and bolsters socially accepted behavior, whereas rejection leads to
lower participation in learning activities and facilitates poor behavior, which are aspects of engagement that pertain to its behavioral component (Fredricks et al., 2004).

**The Current Study**

In sum, we investigated the relationships between teachers’ prejudice reduction practices and students’ emotional and behavioral engagement, and whether these relationships are moderated by teachers’ explicit and implicit attitudes. The current study tested the following hypotheses:

H1: The more teachers report practicing prejudice reduction, the higher students’ behavioral and emotional engagement is.

H2: The more positive explicit multicultural attitudes are, the stronger the relationship between prejudice reduction practices and students’ behavioral and emotional engagement is.

H3: The less prejudiced implicit attitudes towards ethnic minorities are the stronger the relationship between prejudice reduction practices and students’ behavioral and emotional engagement is.

Certain student and teacher background characteristics were expected to be related to the investigated relationships. Specifically, female students tend to be more engaged than male students (Furrer & Skinner, 2003) and teachers’ influence tends to drop with increasing student age (Steinberg & Silverberg, 1986). In addition, based on the proportion of ethnic minority students in their classroom and years of teaching experience, teachers may develop more knowledge and/or positive interethnic/intercultural attitudes due to increased exposure to different cultures (see Intergroup Contact Theory; Allport, 1954; Pettigrew & Tropp, 2006). Lastly, female teachers might be more sensitive to issues that accompany diversity as they tend to be more sensitive to others’ distress (McCue & Gopoian, 2000). Therefore, we included student gender and age, and teachers’ classroom ethnic minority percentage, years of teaching experience, ethnic background, and gender as control variables (covariates) in our models.

Another important factor to consider is the possibility that how prejudice reduction practices are associated with student engagement might differ depending on the ethnic background of the students and whether the student ethnic background is similar to that of the teacher. Previous research shows that multicultural education can have a larger effect on minority students (Shernoff & Schmidt, 2008). Moreover, teachers’ ethnic background might be related to their knowledge, skills, and attitudes towards multiculturalism (Siwatu, 2007).

Nevertheless, we do not have separate hypotheses based on the ethnic backgrounds of students and teachers. The former is due to the expected beneficial effect of cohesion, fairness, and reciprocated respect for the learning behaviors of all students (Patrick et al., 2007). The latter is due to the insufficient number of teachers in our sample who were from other ethnic backgrounds than Dutch (only around 15%). We did, however, include them as control variables in our models.
Method

Participants
Participants were recruited from schools that are in collaboration with the Primary Teacher Education Program of University of Amsterdam (UvA). In total, data were gathered from 35 upper primary school classroom teachers and their 711 students. The teachers had a mean age of 43.72 years (SD = 11.83, range = 24 - 63 years) and, on average, had 16.20 years of teaching experience (SD = 10.20). They were predominantly female (66.2%) and primarily identified themselves as Dutch (85.7%). The participating students had a mean age of 10.6 years (SD = 0.95, range = 9 - 13 years). The gender composition was almost equally distributed with 51.8% females. The self-report measure of ethnic identification indicated that 65.5% of students primarily identified themselves as Dutch, 32.2% identified primarily belonging to a different ethnic group than Dutch, whereas 2.3% did not report any identification.

Procedure
Data were gathered as part of a course on diversity in a teacher education program at UvA. Ethical approval for this study (2017CDE614) was granted by the Ethics Review Board of the Faculty of Social and Behavioral Sciences, UvA, the Netherlands. Second-year undergraduate students tested primary school teachers and children in their classrooms. Teachers provided active consent and parents provided passive consent to their children’s participation to this study. Teachers completed a digital test battery, and the children completed a pen-and-paper test battery under students’ supervision.

All students were provided with a detailed, standardized protocol about the data collection prior to administering the tests, which they had the chance to practice as part of the module. For one month, in the spring of 2017, students administered the tests, which required approximately 20 minutes to complete both for the teachers and the children.

Measures

Student-Level Variables

Student Engagement. Students reported on their engagement in the classroom on a short, 12-item version of the Engagement versus Disaffection with Learning Scale (Skinner, Furrer, Marchand, & Kindermann, 2008). This scale included two subscales. The Behavioral Engagement subscale measured students’ attention, effort, and persistence in initiating and participating in learning activities using 6 items. Example items are “I try hard to do well in school” and “When I’m in class, I just act like I’m working” (reverse coded). The Emotional Engagement subscale measured students’ motivated participation during learning activities using 6 items. Example items are “I enjoy learning new things in class” and “Class is not all that fun for me” (reverse coded). The response scale ranged from 1 (no, that is not true) to
Prejudice Reduction and Student Engagement: Moderating Role of Teachers Attitudes

5 (yes, that is true). Cronbach’s alphas were .75 for Behavior Engagement, .63 Emotional Engagement, and .79 for the overall Student Engagement.

**Demographics.** As students’ background characteristics, we have included gender, age, and self-identified ethnic background. For our analyses, we controlled for gender and age, and explored the possible interaction of student ethnic background with the hypothesized relationships.

**Teacher-Level Variables**

**Multicultural Teacher Practices: Prejudice Reduction.** Teachers reported on three items that have been successfully used by previous investigators in the Netherlands (e.g., Geerlings, Thijs, & Verkuyten, 2017; Verkuyten & Thijs, 2013). The items included: ‘Do you talk about how all cultures should be respected?’, ‘Do you talk about how it is wrong to discriminate?’, and ‘Do you talk about how people from all cultures are equal?’ Teachers reported on a 5-point response scale (1 = absolutely never, 5 = very often) with a Cronbach’s alpha of .79.

**Teacher Implicit Ethnic Attitudes.** The Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998) measured the strength of teachers’ associations between two different ethnic backgrounds (target) and valence words (attribute). The association strength is interpreted as an indication of an implicit attitude due to the theoretical definition of the attitude construct in terms of concept-attribute associations; Greenwald, Nosek, & Banaji, 2003). Within the “compatible” block, Dutch names (i.e., female: Marloes, Claudia, Anouk; male: Pieter, Jeroen, Dennis) and positive valence words (i.e., happiness, peace, happy, beautiful, friend, love) were categorized using one response key while names signaling to a migratory background (i.e., female: Fatima, Naima, Meryem; male: Hassan, Ahmed, Farouk) and negative valence words (i.e., pain, anger, war, angry, cancer, poison) were categorized using a second response key; and vice versa in the “incompatible” block (Spearman-Brown corrected split-half reliability $\alpha$ = .64). People mostly identify the target and the attribute as belonging to the same category more rapidly when the association between them is stronger. The response time differences between compatible and incompatible blocks were calculated to assess the degree of implicit attitudes (larger difference means more negative attitudes) towards the ethnic minority group. These differences are represented using the D measure, which was calculated in accordance with the procedure described in Greenwald et al. (2003). A D-score has a range of -2 to +2. Positive D scores signal that the participants associate the majority group more with the pleasant attributes compared to the minority group, and vice versa for the negative scores. Scores closer to zero represent less bias. We chose the Moroccan-Dutch group as the ethnic minority group during this task, as Turkish- and Moroccan-Dutch ethnic minority groups are at the bottom of ethnic hierarchy in the Dutch society. However, although both groups report similar levels of perceived discrimination, that of Moroccan-Dutch group is slightly higher (Luthra, 2011).
**Teacher Explicit Multicultural Attitudes and Awareness.** Using the Teacher Multicultural Attitudes Survey (TMAS; Ponterotto, Baluch, Greig, & Rivera, 1998), we assessed teachers’ familiarity with and sensitivity to issues of cultural pluralism in their classroom, and awareness of their own biases. Teachers responded to 20 statements on a 5-point response scale (1 = strongly disagree, 5 = strongly agree). An example item was “I believe the teacher’s role needs to be redefined to address the needs of students from culturally different backgrounds”. A total score was calculated per participant after the negative items were reverse scored. Higher scores indicated more positive attitudes and higher awareness towards multicultural education ($\alpha = .84$).

**Demographics.** As teachers’ background characteristics, we included percentage of ethnic minorities in their classroom, years of teaching experience, and their self-identified ethnic backgrounds. For our analyses, we controlled for the ethnic minority concentration in teachers’ classrooms and their years of teaching experience. In addition, we explored the possible interaction of teachers’ ethnic background with the hypothesized relationships.

**Data Analysis**

Eight multivariate outlier cases were dropped after checking the Mahalonobis distance ($df = 13, \alpha = .05$), leaving 35 teachers and 703 students for analysis. As only about 3 percent of the values were missing, we used multiple imputation to deal with missing data since listwise deletion would have biased our estimations (Kang, 2013).

We fitted a series of multilevel models using IBM SPSS Statistics for Macintosh, Version 24.0 to examine the unique contribution of teachers’ prejudice reduction efforts, their implicit and explicit attitudes, and teacher and student background characteristics in predicting student engagement. This analytical strategy was chosen as it considers the nested structure of the data, avoids aggregation bias, and underestimation of standard errors (Snijders & Bosker, 2012). As students were nested in their teachers’ classrooms, we considered both the student-level (Level 1) and teacher-level (Level 2) in this study. All the fixed and random effects represented in our multilevel models were based on maximum likelihood estimation (ML). Level 1 predictors were centered around the grand mean for an easier interpretation. For all analyses, the statistical significance level was set to .05.

Following the stepwise sequential modeling method proposed by Raudenbush and Bryk (2002), we increased the complexity of the models with each subsequent step. In the first step, we estimated an unconditional baseline model without any predictors, to determine the variance of student engagement at the student-level (Level 1) and teacher-level (Level 2). This initial model was used as a baseline model for subsequent model comparisons. We used Akaike Information Criterion (AIC) to compare models. Although AIC values are not interpretable themselves, the difference in AIC values provide an easy to interpret and quick comparison to test the strength of evidence for choosing one model over another. This is an objective indicator that is free from arbitrary $\alpha$ levels. An AIC value difference of 2, regardless
of the size of the AIC value, provides substantial support for the model with the lower AIC value (Burnham & Anderson, 2004).

In the second step, we added students’ background characteristics as fixed effects of student engagement (Model 1). After accounting for the individual student characteristics, we added teacher-level variables to the equation (teachers’ background characteristics, their level of prejudice reduction, and their explicit and implicit attitudes) to explain variance at the between-classroom level (Model 2). As a next step, we examined whether introducing interaction terms between teachers’ prejudice reduction and their implicit and explicit attitudes improved the model fit (Model 3).

Finally, we allowed the significant student-level predictors’ slopes to vary (Model 4). If the association between any of these variables and student engagement significantly varied across classrooms, we calculated cross-level interactions to explain the variance.

Results

Descriptive Statistics

In the current study, we calculated and used the average score for overall Student Engagement scale for the following reasons: (1) the reliability of the Emotional Engagement subscale was relatively low, and the two subscales were moderately correlated ($r=.40$, $p < .01$), and (2) we did not have separate hypotheses for Behavioral and Emotional Engagement.

Mean values, standard deviations, and zero-order correlations among the variables are displayed in Table 1.

Students’ Ethnic Background significantly correlated with Student Engagement, such that students with a migrant background showed lower SE. Overall, most students reported relatively high Engagement ($M = 3.94$, $SD = 0.45$)

The correlations between teacher variables were mostly significant. The Percentage of Ethnic Minorities in the Classrooms was positively related to teachers’ Prejudice Reduction practices, and their Implicit and Explicit Attitudes. This indicates that teachers engaged in more Prejudice Reduction practices and had relatively more positive Implicit and Explicit Attitudes in classrooms with more Ethnic Minority Concentration. In line with previous literature, the relationship between teachers’ Implicit and Explicit Attitudes was moderate, signaling that Implicit and Explicit Attitudes tap on related but distinct aspects of attitudes (Hofmann, Gawronski, Gschwendner, Le, & Schmitt, 2005).

Overall, most teachers reported positive Explicit Multicultural Attitudes ($M = 3.52$, $SD = 0.45$), while they implicitly favored the ethnic majority compared to the ethnic minority group ($M = .74$, $SD = 0.48$). In addition, most teachers reported to sometimes but not often engage in Prejudice Reduction practices ($M = 3.46$, $SD = 1$). As expected, female teachers showed significantly more positive Explicit Attitudes, less prejudiced Implicit Attitudes, and reported engaging in more Prejudice Reduction practices than male teachers. In addition, on
average, teachers who self-identified as Dutch reported significantly more positive Explicit Attitudes, engaged more in Prejudice Reduction practices, but also reported being appointed in classrooms with lower Percentage of Ethnic minorities and showed more negative Implicit Attitudes towards ethnic minorities, compared to teachers with other Ethnic Backgrounds.

**Unconditional Means Model**

To examine whether Student Engagement varied across classrooms, we fitted a separate unconditional means model in the first step of the analysis. The model contained the outcome variable Student Engagement (SE) and only intercept as the predictor. Results indicated significant variation in SE at Level 1 and Level 2. Intraclass correlations (ICC) showed about 11% variance in SE, which can be explained by the differences among classrooms.

**Student-Level Covariates of Student Engagement**

To identify the variables that were uniquely related to variation among SE, we modeled fixed effects of students’ background characteristics: Age, Gender, and Ethnic Background. This first model (Model 1) substantially improved the prediction of SE, with a difference in AIC value of 1.693. The unstandardized coefficients indicated a significant positive relationship between Student Ethnic Background and SE ($B = .11, p < .05$). The variation in intercepts was still significant after accounting for student-level variables. Therefore, the next step included the addition of Level 2 variables to explain this variation.
Table 1
Descriptive Statistics and Correlations: Student- and Teacher-Level Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Student Gender</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>2. Student Age</td>
<td>-.01</td>
<td></td>
<td>.08*</td>
<td>.04</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Student Ethnic Background</td>
<td></td>
<td>.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>4. Student Engagement</td>
<td>-.04</td>
<td>-.05</td>
<td>.29**</td>
<td>-.04</td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>5. Classroom Ethnic Minority Percentage</td>
<td>.07</td>
<td>.07</td>
<td>.29**</td>
<td>-.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Teacher Teaching Experience (in years)</td>
<td>-.05</td>
<td>-.04</td>
<td>.13**</td>
<td>-.27**</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Teacher Gender</td>
<td>-.04</td>
<td>-.09*</td>
<td>-.06</td>
<td>.03</td>
<td>-.02</td>
<td>-.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Teacher Ethnic Background</td>
<td>.02</td>
<td>.15**</td>
<td>.14**</td>
<td>.00</td>
<td>.10**</td>
<td>.30**</td>
<td>.11**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Teacher Implicit Ethnic Attitudes</td>
<td>-.03</td>
<td>-.19**</td>
<td>-.03</td>
<td>-.06</td>
<td>.10**</td>
<td>-.10**</td>
<td>-.26**</td>
<td>-.18**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Teacher Exp. Multicultural Attitudes</td>
<td>.01</td>
<td>.12**</td>
<td>-.12**</td>
<td>-.04</td>
<td>.23**</td>
<td>-.34**</td>
<td>.15**</td>
<td>-.06</td>
<td>-.32**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Teacher Prejudice Reduction</td>
<td>.03</td>
<td>-.00</td>
<td>.03</td>
<td>-.03</td>
<td>.16**</td>
<td>-.33**</td>
<td>.15**</td>
<td>-.19**</td>
<td>.07</td>
<td>.10**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Student Engagement (variable 4) is measured on a scale ranging from 0 to 5. The D-scores representing Implicit Ethnic Attitudes (variable 9) range from -2 to +2, with positive attitudes signaling more favorable attitudes towards the ethnic majority group hence more prejudice. Teacher Explicit Attitudes and Prejudice Reduction practices (variables 10 and 11) are measured on scales ranging from 0 to 5, higher scores indicating more positive Attitudes and engaging more often in Prejudice Reduction practices respectively. *p < .05. **p < .01.
Chapter 3

Teacher-Level Predictors of Student Engagement

After accounting for the role of students’ background characteristics at the student level, we added teacher-level variables to the model to explain variance at this level (Model 2). These included teachers’ background characteristics: Classroom Ethnic Minority Percentage, Teaching Experience, Gender, and Ethnic Background, their Prejudice Reduction (PR), and Implicit (IA) and Explicit Attitudes (EA).

The results showed no significant changes in the variables at the student level when compared to Model 1. With regard to the teacher-level variables, SE showed statistically significant associations with teachers’ years of Teaching Experience ($B = .01, p < .05$). This second model (Model 2) substantially improved the prediction of SE, with a difference in AIC value of 3.167.

Teacher-Level Interactions

In addition, we included interaction terms between Prejudice Reduction and Implicit Attitudes, and Prejudice Reduction and Explicit Attitudes to this model (Model 3). Not restricting the data to fit an only main effects model yielded significant results in the interaction between PR and EA ($B = .11, p < .05$) as predictors of SE. Introduction of the interaction terms improved the model fit with a difference in AIC value of 2.966.

Random Slopes Model

Subsequently, we allowed the significant student-level predictor Student Ethnic Background’s slope to vary in order to see whether its relationship to SE varies within classrooms. This provided an additional improvement to the model fit, with a difference in AIC value of 1.901 (Model 4). The random slope coefficient of its association with SE was significantly different from zero ($\sigma^2 = .02, p < .05$). These results indicate that the association of Student Ethnic Background with SE varied across classrooms. Consequently, we added cross-level interactions stepwise to the model. We explored whether Prejudice Reduction, and the association of Prejudice Reduction with Implicit and Explicit Attitudes could explain the variance in the slopes of Student Ethnic Background by calculating cross-level interactions of these variables with Student Ethnic Background. However, no significant cross-level interactions were found. The results of these fixed and random effects of the analyses are shown in Table 2, excluding the cross-level interactions as we did not interpret these interactions further.

In the best fitting model (random intercepts and slopes), our results indicated a statistically significant average positive association between the interaction term between PR and EA, and SE. A simple slope analysis revealed that association between PR and SE was only significant for teachers 1 SD above the mean of EA ($B = .11, p < .05$). For teachers 1 SD below the mean of EA ($B = -.07, p > .05$), and with a mean level of EA ($B = .02, p > .05$), the association between PR and SE was not significant (see Figure 1).
Table 2
Fixed and Random Estimates for Predictors Student Engagement

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Student Engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M1</td>
</tr>
<tr>
<td></td>
<td>B (SE)</td>
</tr>
<tr>
<td><strong>Fixed Parameters</strong></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>3.85 (0.05) **</td>
</tr>
<tr>
<td><strong>Student-level Variables</strong></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-.02 (0.02)</td>
</tr>
<tr>
<td>Age</td>
<td>-.02 (0.02)</td>
</tr>
<tr>
<td>Ethnic Background</td>
<td>.11 (0.05) *</td>
</tr>
<tr>
<td><strong>Teacher-level Variables</strong></td>
<td></td>
</tr>
<tr>
<td>Class Ethnic Minority Percentage</td>
<td>-</td>
</tr>
<tr>
<td>Gender</td>
<td>-</td>
</tr>
<tr>
<td>Teaching Experience</td>
<td>-</td>
</tr>
<tr>
<td>Ethnic Background</td>
<td>-</td>
</tr>
<tr>
<td>Implicit Attitudes</td>
<td>-</td>
</tr>
<tr>
<td>Explicit Attitudes</td>
<td>-</td>
</tr>
<tr>
<td>Prejudice Reduction</td>
<td>-</td>
</tr>
<tr>
<td><strong>Interactions with Prejudice Reduction</strong></td>
<td></td>
</tr>
<tr>
<td>Implicit Attitudes</td>
<td>-</td>
</tr>
<tr>
<td>Explicit Attitudes</td>
<td>-</td>
</tr>
<tr>
<td><strong>Random Parameters</strong></td>
<td></td>
</tr>
<tr>
<td>Between classes</td>
<td>.02 (0.15) **</td>
</tr>
<tr>
<td>Within classes</td>
<td>.18 (0.42) **</td>
</tr>
<tr>
<td>ΔR²</td>
<td>%2</td>
</tr>
</tbody>
</table>

Note. Gender: 1 = boys/male teachers, 2 = girls/female teachers. Ethnic Background: 1 = students/teachers self-identified as Dutch, 2 = students/teachers self-identified as Other than Dutch. M1 = Model 1 with only student level variables, M2 = Model 2, with student and teacher level variables, without interactions terms, M3 = Model 3, with student and teacher level variables, including interactions terms, M4 = Model 4, with both random intercepts and slopes. ΔR² shows difference in explained variance between the subsequent models.

*p < .05. **p < .01.
The current study investigated the relationship between teachers’ prejudice reduction practices and student engagement. In addition, the moderating role of teachers’ explicit attitudes toward multiculturalism, and their implicit attitudes towards an ethnic outgroup in the Netherlands was examined. The results of our multilevel analysis showed that teachers’ prejudice reduction practices can have a positive impact on student engagement, but only if these practices are consistent with teachers’ explicit multicultural attitudes. The observed relationship was rather weak, but statistically significant. We did not find support for our first hypothesis that the more teachers report practicing prejudice reduction, the higher students’ engagement is. As we could not establish this direct connection, we cannot talk about a moderation effect of attitudes on this relationship. Nevertheless, we did find an interaction effect wherein prejudice reduction’s relationship to student engagement changed as a function of teachers’ explicit attitudes: for the teachers who reported above average levels of positive explicit attitudes, prejudice reduction had a statistically significant positive association with student engagement. Our second hypothesis, therefore, received only partial confirmation. Contrary to our third hypothesis, however, we did not find any effect of implicit ethnic attitudes on the relationship between teachers’ prejudice reduction and student engagement.

Our results partly echo previous findings, indicating that teachers can have a positive influence on student engagement by creating a safe, unprejudiced, environment in which
students can feel a sense of belonging, connection, and support for their identity (Carter, 2005). However, our findings also show that engaging in prejudice reduction practices seems to be insufficient in itself. As previously mentioned, many teachers are advocates of equitable educational opportunities but their actual performance in multicultural practices may show shortcomings (Reupert et al., 2010). Our results followed a similar trend: most teachers in our sample reported having positive multicultural attitudes. However, only the proportion of these teachers who reported above-average multicultural sensitivity and awareness seemed to make a positive difference in students’ engagement via their prejudice reduction practices.

One explanation for this finding could be that teachers who are very sensitive to and familiar with matters of cultural pluralism provide good examples of multicultural values themselves. They not only talk about multiculturalism as an abstract ideal, but also enact it in the classroom by being aware of issues around diversity and acting on it. One could therefore argue that these teachers actually “walk the talk”. Scholars (Kreber, 2010; Palmer, 1998) indeed previously argued that teachers themselves should feel a certain connectivity to topics they discuss and their own values should be in line with the practices they encourage in their students. It is possible that only then, teachers not only know what they want to promote in their students but also know how to promote, as they are more aware of and able to identify potential “hot spots” in their students’ experiences and realities within and outside of school. This would mean that they are reflective and knowledgeable enough to lead a meaningful and effective dialogue around diversity. If, however, teachers engage in prejudice reduction practices due to, for instance, expectations from their schools, or social demands from their colleagues or social networks, these practices might even have a negative effect on their students’ engagement (Kreber, 2010).

Previous research may have failed to demonstrate such an interaction effect due to differences between the earlier studies and the current research. Only a few studies included student engagement as one of the outcomes of prejudice reduction (Spencer, 1982, 1983; Steele, 1997). Firstly, however, these studies did not seek to demonstrate the direct relationship between prejudice reduction and student engagement. Secondly, these studies were qualitative in nature, and hence might not have had the same scrutiny as our quantitative approach. Therefore, they might not have captured such an interaction effect as we found in our study, given the found association was significant but small.

As in previous research (Glock & Karbach, 2015; Parks & Kennedy, 2007), our findings showed that teachers had a more positive implicit attitude towards ethnic majority students compared to students with an ethnic minority background. However, these implicit attitudes were not related to teachers’ prejudice reduction practices when predicting students’ engagement. This finding is consistent with results from several studies where implicit and explicit biases against certain groups were also found to not always predict real-world behavior (e.g., Dovidio et al., 2002; Fazio, Jackson, Dunton, & Williams, 1995). In fact, teachers might be quite aware that their implicit biases may influence their behavior and therefore
deliberately try to prevent automatic reactions from playing out. This could be due to either having positive explicit multicultural attitudes and self-concepts that value equity, or simply because society usually disapproves of discriminatory behavior (Park et al., 2008).

Nonetheless, implicit attitudes might play a role in relation to other aspects of diversity, which we did not measure in our study. We have shown in our analyses, for instance, that ethnic background of students was a significant predictor of student engagement, and its effect varied across classrooms. The teacher variables in our study, however, could not explain this variance. Quality of individual student-teacher relationship might be one aspect that could be influenced by implicit attitudes of teachers or students and could help explaining the variance. Previous research indeed found evidence that teachers have less close and more conflicting bonds with students from some ethnic minority backgrounds (Hamre & Pianta, 2001). These students’ engagement is more strongly influenced by the quality of their relationships with the teacher compared to their ethnic majority counterparts (Roorda et al., 2011). An alternative explanation for not finding any effect of implicit attitudes may be the nature of the test we used to measure these attitudes. Earlier studies have found low correlations and varying effect sizes between the results of implicit attitude measurements, depending on the characteristics of the measures (e.g., Glock & Karbach, 2015) and stimuli (e.g., Robinson, Meier, Zetocha, & McCaul, 2005).

**Strengths and Limitations**

The research presented here goes beyond prior work in several respects. To the best of our knowledge, the current study is the first to examine the direct relationship between prejudice reduction and student engagement, and to include both explicit and implicit attitudes of teachers in relation to multiculturalism. Moreover, the study contributes to the multicultural education literature that focused mostly on the U.S. educational context, used mainly qualitative methods, and had pre-service teachers as participants (Agirdag et al., 2016).

The current study also has a number of limitations. First, the generalizability of our results is limited due to our sample. Students with an ethnic minority background are more prevalent in big cities like Amsterdam—where the data were collected. This renders the extent and importance of prejudice reduction practices more pronounced compared to cities where teachers or students are less in contact with people from different backgrounds. Moreover, our participants were from schools that had a collaboration with our university. This openness to collaboration might also signal that the teachers are open to self-development and hence may be more aware of their own biases compared to the general teacher population.

Second, we measured teachers’ self-reported prejudice reduction practices with a rather limited number of items that provided us with an overview of differences that might exist between certain groups of teachers but calls for a more detailed investigation of their practices. Last, on a similar note, we did not have any observations of actual prejudice
reduction practices. Although observations in themselves can lead to certain socially desirable behaviors and usually only provide a snapshot of the range of teacher behaviors (Muijs, 2006), they could have provided us with valuable insights beyond what we captured with self-report measures.

Future research can overcome the limitations of our study and build on this research in several ways. Firstly, it would be fruitful to investigate the ways in which teachers who are higher and lower on explicit multicultural attitudes differ in their prejudice reduction practices, since explicit attitudes seem to support or hamper their effectiveness. Classroom observations and student reports can help mapping these practices out in more detail, and may, in addition to dialogue, look into other means of reducing intergroup bias such as promoting contact and cooperation between children from different ethnic backgrounds (Pettigrew & Tropp, 2006).

Secondly, the discussed possible role of explicit attitudes in suppressing and altering prejudiced implicit attitudes should be established using a longitudinal design. Lastly, the current study investigated teacher-level variables that might change the effect of prejudice reduction on student engagement. Future research can include student-level variables that might also interact with the examined relationship. For instance, strength of ethnic identification, perceived discrimination, and the number of ethnic outgroup friends have been previously shown to be related to endorsement of multiculturalism and might therefore influence the effect of prejudice reduction (Verkuyten & Martinovic, 2006).

**Practical Implications and Conclusion**

To conclude, our findings are encouraging in that teachers’ attitudes and intentions seem to matter for their students. Similar to other members of society, teachers hold certain biases. However, being aware of these biases and their possible behavioral manifestations and being familiar with and sensitive to issues of diversity in the classroom can be supportive of the effectiveness of multicultural practices.

Exposure to diversity might promote prejudice reduction practices and positive attitudes, as our results indicated that teachers who were appointed in classrooms with higher ethnic minority concentration tended to have more positive implicit and explicit attitudes and engaged in more prejudice reduction practices (also see Intergroup Contact Theory; Allport, 1954; Pettigrew & Tropp, 2006). In addition, professional development programs have been established to increase individuals’ awareness of their biases while also informing them that, through careful monitoring of potential biased reactions, they can learn to regulate and inhibit prejudiced responses (Monteith, 1993; Monteith et al., 1993; as described in Burns, 2014).

Teachers who have been in the teaching force for a longer period might especially benefit from these programs as our results indicated that these teachers reported positive attitudes and prejudice reduction practices to a lesser extent compared to teachers who
have been teaching for a shorter period of time. Raising awareness of teachers about the availability of support programs, how to access them, and how to best implement these practices in classrooms can be empowering for teachers in navigating diversity (Reupert et al., 2010).
Having positive and meaningful social connections is one of the basic psychological needs of students. The satisfaction of this need is directly related to students’ engagement—a robust predictor of educational achievement. However, not all students’ needs are met to the same extent. Minoritized students not only report experiencing disproportionate levels of intergroup bias (e.g., prejudice), but their minoritized position is also emphasized by the mainstream curriculum and instruction that largely ignore their perspectives and experiences. Drawing upon Self-Determination Theory and Intergroup Contact Theory, the current study investigated the extent to which the use of multicultural practices can improve students’ engagement, and whether this relationship is mediated by positive student peer relationships. With data from 34 upper primary school classroom teachers and their 708 students, our multigroup analysis using structural equation modeling indicated that in classrooms with low (compared to high) minoritized student concentration, peer relationships can mediate the positive as well as negative effects of different dimensions of multicultural education on student engagement.

This chapter is based on:

CHAPTER 4

Effects of Multicultural Education on Student Engagement in Low and High Concentration Classrooms: The Mediating Role of Student Relationships
Having positive and meaningful social connections (i.e., relatedness) is one of the basic psychological needs of students. The satisfaction of this need is directly related to students’ intrinsic motivation and engagement (Deci & Ryan, 1985). However, in Dutch classrooms, minoritized students report experiencing disproportionate levels of prejudice, stereotyping, and discrimination compared to their majority group peers (OECD, 2014; Thijs et al., 2014), suggesting that not all students’ needs are met to the same extent. Moreover, students’ minoritized position is further emphasized by the mainstream curriculum and instruction that do not meet the academic needs of a diverse student population (Bingham & Okagaki, 2012)

A less responsive educational environment may result in lower levels of student engagement for students. As one of the important predictors of academic outcomes (Reschly & Christenson, 2012), the resulting lower levels of engagement may partially account for minoritized students’ lower ratings in academic indicators such as standardized test scores at the end of primary school and higher drop-out rates compared to that of their majority group peers (Gijsberts et al., 2012; Van De Werfhorst & Van Tubergen, 2007).

One potential way to tackle this problem is to incorporate more multicultural practices into education. These practices are designed to mitigate inequality of education opportunities, support equal peer interactions, and improve intergroup relationships (Klein, 2012). Drawing upon Self-Determination Theory (SDT; Deci & Ryan, 1985), the current study investigated the extent to which the use of these practices is related to students’ engagement, and the degree to which students’ peer relationships, as a proxy for relatedness, is a mediator to this relationship. In addition, we tested the proposed relationships in classrooms with low and high ethnic minoritized student concentrations to test whether the investigated relationships differ. To the best of our knowledge, the current study is a first to approach multicultural education with a SDT lens, and to examine multicultural education’s effect on peer relationships in different intergroup contexts.

**Student Engagement**

We conceptualize student engagement as the “outward manifestation of motivation” and define it as the extent to which a student is actively involved in learning activities and environments (Skinner et al., 2009; Skinner & Pitzer, 2012), which has been positively associated with favorable educational outcomes including advances in academic achievement (Reschly & Christenson, 2012). Student engagement is manifested in multiple dimensions (Skinner et al., 2009). First, the behavioral dimension of engagement includes students’ efforts in initiating learning activities, and attention, concentration, persistence, and involvement during these activities. Second, the emotional dimension of engagement includes enthusiasm, interest, enjoyment and satisfaction states during learning activities. Third, the cognitive dimension of engagement includes goal strivings, mastery orientation,
self-regulation, and the use of coping strategies preceding and during learning activities. In the current study, we focus on the emotional and behavioral dimensions of engagement.

School contexts feature conditions that facilitate motivation and engagement to the extent to which they satisfy students’ basic psychological needs, namely autonomy, competence, and feelings of relatedness (Connell & Wellborn, 1991; Deci & Ryan, 1985; Reeve, 2002; Ryan & Deci, 2000). The extent to which social contexts can be responsive to students’ needs, however, differs not only between but also within schools and classrooms, for example based on the cultural background of students (Skinner & Pitzer, 2012). More specifically, motivation and learning may be inhibited by experiences of discontinuity between the mainstream culture and students’ home culture, due to differences in language, values, norms, practices, and the quality of relationships with teachers and peers (Bingham & Okagaki, 2012).

In Europe, similar to other parts of the world, the teaching workforce is still fairly homogenous, middle class, and is dominated by teachers with the mainstream cultural background. The disparity between the diverse student population and the homogenous teaching body has been shown to have hidden costs for students (Reiter & Davis, 2011), such as less relatable educational content, pedagogical practices that do not support “alternative” ways of learning, low expectations of success, less positive and more negative feedback from teachers, or experiences of stereotype threat (Gay, 2000). Similarly, the discontinuity between the majority and the minoritized students’ cultures can have covert consequences such as difficulties taking into account the experiences and perspectives of the outgroup members (especially that of the non-dominant group members) (Dovidio et al., 2004) or rather overt negative consequences such as name-calling from peers and exclusion from peer groups because of one’s ethnic or cultural background (Thijs & Verkuyten, 2014; Vervoort et al., 2010). Indeed, for many students in the Western part of the world, including the Netherlands, interethnic tensions are a prominent part of minoritized students’ lives (Banks, 2016; Thijs & Verkuyten, 2014), starting within neighborhoods and continuing in the educational institutions and the labor market (Guiraudon et al., 2005). These overt and covert negative consequences of cultural discontinuity can hamper students’ peer relationships and thus relatedness.

**Peer Relationships and Engagement**

In educational institutions, the curriculum, materials, and instruction tend to be primarily from the perspective of the dominant group. As a result, minoritized groups’ histories and cultures are usually added as a mere side note to the regular curriculum and

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11 To the best of our knowledge, there are no measures that assesses all three facets of students’ engagement in the classroom, as opposed to the school in general, in primary school aged children. Therefore, we focused on the emotional and behavioral aspects of engagement.
mentioning of social biases are kept to a minimum, thereby perpetuating the acceptance of existing inequalities and not providing equitable opportunities for development.

These biases, in addition, are often mirrored in interpersonal interactions between students and teachers, and between peers (Thijs & Verkuyten, 2014). Previous research in Dutch schools indicates that even in culturally diverse schools with many different ethnic groups, children rarely have friendships and casual contacts with peers of a different ethnic background (Baerveldt et al., 2007; Fortuin et al., 2014; Vermeij et al., 2009). Intergroup Contact Theory suggests that intergroup contact in situations characterized by support from social and institutional figures, equal status, and a cooperative environment wherein people can rely on each other to reach shared goals can greatly help reduce intergroup bias and improve interpersonal interactions (Allport, 1954; Pettigrew & Tropp, 2006). Without meaningful contact that is supported by institutional authority figures such as teachers, organizing mixed classrooms seems to be inadequate for creating equal status between students from different ethnic backgrounds, and promoting interethnic attitudes that are positive enough to desegregate peer groups.

Students who perceive their ethnic groups to have negative societal evaluations and/or who experience social biases due to their ethnic backgrounds, in turn, report decreases in their positive self-evaluations and in the quality of their engagement, including their interest and determination (Chavous et al., 2003; Eccles et al., 2006). On the grounds that diversity in cultural backgrounds is an irrefutable part of Western societies, only teachers who respect and value the cultural characteristics of their students and their experiences, and support students in establishing positive contacts can successfully help to satisfy all of their students’ psychological needs. Teachers, therefore, need to adopt practices that are in line with the needs of the diverse student body that they teach (Banks, 2016).

**Multicultural Education**

Aiming for an equally responsive social context for all students, multicultural education offers practices that are in line with the needs of diverse student populations. Banks (2004) provides a detailed conceptualization of multicultural education that includes five distinct but highly interrelated dimensions. We used these dimensions to investigate the relationships between multicultural education, peer relationships, and engagement.

In his conceptualization of multicultural education (Banks, 2004), teachers should employ content integration from a variety of cultures in what they teach, reflecting and representing the diversity of their students through texts, histories, values, beliefs, and varying perspectives from different cultures (Koshy, 2017). Moreover, teachers should increase their students’ awareness of the knowledge construction process and help students to be critical about who the knowledge serves and from whose perspective it was constructed (e.g., cultural references, biases). Next, teachers should aim for prejudice reduction by modifying their students’ attitudes through teaching methods, materials, and dialogue to decrease
negative and improve positive intergroup relations by actively counteracting social biases (i.e., prejudice, stereotyping, discrimination). Further, teachers should aim for an empowering school culture and social structure, by examining disproportionality in attendance and achievement between groups in various aspects of school (e.g., to giftedness programs). Lastly, teachers should strive for equity pedagogy, i.e., equity in how they teach, by modifying their teaching to include various teaching and assessment styles to facilitate the learning and academic achievement of all students. This requires avoiding standardized, one-size-fits-all approaches to teaching and learning, relating content to students’ lives and creating opportunities for them to engage with learning in various forms (e.g., cooperative learning, problem-based learning, role-playing, simulations).

**Student Engagement Through Peer Relationships**

Practicing multicultural practices can contribute to the satisfaction of students’ needs for relatedness through increasing positive peer relationships and reducing negative ones. By tapping into students’ experiences, identities, and struggles (e.g., content integration), and critically examining mainstream narratives (e.g., knowledge (de)construction of history, mass media), teachers can help their students to develop awareness of and respect for different perspectives (Camicia, 2007). Accordingly, using multicultural practices, teachers can create the grounds for a safe environment in which dialogue can take place about issues related to prejudices, stereotypes, and discrimination. They can promote learning environments where equal status and cooperative goals are emphasized (in line with Intergroup Contact Theory), and where differences are appreciated and seen as a resource for social and academic development (e.g., prejudice reduction; Banks, 2004; Ponterotto et al., 1998).

For instance, in a study conducted with children between the age of 6 and 11 (Hughes, Bigler, & Levy, 2007), researchers compared pre- and post-test results of prejudiced attitudes towards African Americans in an experimental and in a control group. The experimental group learned about acclaimed African American leaders, during which examples of their experiences with discrimination were discussed. In contrast, the control group only received the biographical information about the leaders without any discussions on racism. The results revealed that, compared to the control group, European American children in the experimental group showed lower degrees of prejudice towards African Americans, and both African American and European American children displayed greater valuing of “interracial” fairness.

As suggested by the Intergroup Contact Theory, when interactions between peers from different groups happen under conditions that lay ground for fairness and equal status, prioritize cooperation and common goals, and that are supported by institutional authorities such as teachers, these peer interactions are suggested to improve affective ties and friendships, and reduce negative emotions such as intergroup anxiety. Yet, it has
been proposed that, under certain circumstances, multiculturalism can also lead to negative attitudes.

According to Ingroup Projection Model, we use ingroup standards to also judge outgroup members, and if they deviate from these standards, intergroup bias emerges. One way to alleviate this bias is to define the superordinate group that encompasses both our ingroup and the outgroup(s), by its diversity. In this way, diversity becomes the new standard with which we judge others (Mummendey & Wenzel, 1999; Wenzel et al., 2007). This is an approach similar to that of multiculturalism that explicitly acknowledges differences among groups, perspectives, and experiences as aspects of our identities that should be celebrated. Steffens and colleagues (2017), however, found that activating a superordinate group’s diversity characteristics can generate negative outgroup attitudes for the majority group members who see their ingroup as highly prototypical and therefore as an essential representation of the superordinate category. On the other hand, for those who believe their group to be just one among multiple groups, diversity activation generated positive attitudes.

The Current Study

As suggested by SDT, classroom practices can stimulate greater engagement to the extent that they are relevant to students’ experiences and concerns, are challenging, are responsive to their interests, needs, and goals (Niemiec & Ryan, 2009; Skinner & Pitzer, 2012), and reflect a caring and supportive alliance between teachers and their students (Skinner et al., 2008). Our hypothesized model depicted in Figure 1, therefore, presents both a direct relationship between multicultural practices and student engagement and an indirect relationship that is mediated by students’ peer relationships (relatedness). We focus our investigation on the basic psychological need for relatedness (and not also on autonomy and competence), as it represents a major challenge minoritized youth face in the Netherlands in relation to their outgroup.

A body of student- and teacher-level control variables were also incorporated in our models. Previous research has shown a normative steady decline in engagement throughout school years, more evidently so for male students and children from families with low socioeconomic status and from minoritized groups (Wigfield et al., 2006). Moreover, multicultural education has been suggested to have differing effects on students based on their migration histories (Abacioglu, Isvoranu, et al., 2019). Therefore, student-level control variables included students, age, gender, and ethnic background.

Moreover, teachers from minoritized backgrounds themselves have been suggested to relate to the cultural discontinuity students may be experiencing and thus practice multicultural education more effectively (Bingham & Okagaki, 2012). Similarly, female teachers have been found to be more sensitive to people’s distress (McCue & Gopoian, 2000) and hence might be more vigilant against challenges students experience and may be more likely to engage in practices as prejudice reduction (Banks, 2004). Additionally,
teachers may learn more about different cultures, value differences in backgrounds, and develop more positive interethnic and intercultural attitudes with increasing years of teaching experience and exposure to different cultures (Pettigrew & Tropp, 2006). Lastly, there is a distinction made between public and so-called ‘denominational’ schools in the Netherlands. Although both types of schools are publicly funded, the latter teach on the basis of religion, a specific philosophy or vision of education, and the former do not, which may affect the degree to which teachers employ multicultural practices. We therefore included teacher gender, ethnicity, and teaching experience, and whether they are appointed in public or denominational schools as teacher-level control variables in our models.

As the degree to which majority group members perceive themselves to be prototypical of the superordinate group may change based on the intergroup context and the numerical majority of the ethnic majority group in a given context (Steffens et al., 2017), the effect of multicultural education on peer relationships and engagement can also differ based on the ethnic composition of classrooms. We therefore tested our hypothesized model in classrooms with low and high minoritized student concentration (further information follows in Methods) based on the discussion in Wielzen and van Dijk-Groeneboer (2018) in relation to the school demographics in the Netherlands where this study was conducted.

**Methods**

**Participants**

Participants were recruited from schools that collaborate with the Primary Teacher Education Program of the University of Amsterdam (UvA). In total, data were gathered from 34 upper primary school classroom teachers and their 708 students. We removed one student for missing more than 75% of the responses. The remaining sample included teachers with a mean age of 38.87 ($SD = 11.20$), who were predominantly female (64%) and who primarily identified themselves as Dutch (82.7%). Teachers had an average of 12.20 years of teaching experience ($SD = 9.36$). Percentage of ethnic minoritized and majority students were similar with 50.42% ethnic minoritized students ($SD = 36.18$). Additionally, about half of the teachers were appointed in denominational schools (47.9%).

The participating students’ ages ranged from 7 to 13 and had a mean age of 10.66 ($SD = 1.11$). About half of the students were female (52.6%). Based on whether they identified either of their parents as having an ethnic background other than Dutch, 65% of students were identified as belonging to an ethnic group with migration history.
Chapter 4

Measures

Teacher-Level

Multicultural education. Teachers responded to 13 statements, on a 5-point Likert-type scale, about their practices in student assessment, curriculum and instruction, classroom management, and cultural enrichment. The items were based on the Culturally Responsive Teaching Self-Efficacy Scale (CRTSES; Siwatu, 2007), but were shortened and adapted to measure practices in the classrooms. The scale has been successfully used in previous research (e.g., Abacioglu et al., 2020). It is referred to as the Culturally Responsive Teaching Scale from hereon. An example item from the survey is “I make use of examples that are relatable for students from culturally different backgrounds” (responses on a scale from 1: never to 5: always). Cronbach’s alpha was .81 for this scale.

Some items were excluded from the original 40-item scale before data collection because of the following reasons: they did not focus on cultural aspects of teaching and instruction (e.g., “I communicate with parents regarding the progress of their child’s education”), they were too subject specific (e.g., ‘I talk about the achievements of culturally different others in Math’), or they were too similar to other items. A previous study provided us with data from the full Culturally Responsive Teaching Scale that was adapted to measure teacher practices (Abacioglu et al., 2020). We could therefore check with a different sample whether excluding these items would have a big impact on the reliability of the scale. Cronbach’s alpha for that sample was .90 before and .88 after the item reduction. As such, we felt confident to exclude these items from the scale.

Based on the dimensions of multicultural education delineated by Banks (2004), we thus retained all items that fell in three categories: teachers’ content integration ($\alpha = .62$), prejudice reduction ($\alpha = .61$), and equity pedagogy ($\alpha = .76$). These categories were informed by exploratory factor analysis (see Supplementary Materials) and multicultural theory, and further validated by confirmatory factor analysis which is detailed in the Data Analysis section.

Demographics. Teachers reported on the proportion of ethnic minoritized students in their classrooms, whether or not their school is a denominational school, their own age, gender, ethnic background, and years of teaching experience in years.

Student-Level

Peer relationships. A revised version of ‘Well-being in Relation to Fellow Students’ questionnaire from Peetsma, Wagenaar, and Kat (2001) was used to assess students’ peer relations, previously used in a large-scale Dutch research mapping out school careers of students from primary until the end of secondary school (COOL 5-16, Driessen, Mulder, Ledoux, Roeleveld, & Veen, 2009). The original scale included 6 items, which was combined with 4 items from the ‘Social Integration in the Class’ questionnaire from Van Damme, De Fraine, Van Landeghem, Opdenakker, and Onghena (2002). Students responded to 10 statements
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about (not) getting along with their peers in the classroom (1 = ‘not correct at all’, 5 = ‘very correct’). Example items include “In my class, I sometimes feel alone” (see Appendix A for the items). Cronbach’s alpha for the combined scale was .86.

**Student Engagement.** Students responded to 12 statements, on a 5-point Likert-type scale (1 = ‘no, that is not true’, 5 = ‘yes, that is true’), about their engagement in the classroom. The items were based on the Engagement Versus Disaffection with Learning Scale (Skinner et al., 2008), and has been successfully used in previous research (e.g., Abacioglu, Zee, et al., 2019). Half of the statements measured students’ attention, effort, and persistence in initiating and participating in learning activities, reflecting their Behavioral Engagement. The other half measured students’ motivated participation during learning activities, reflecting their Emotional Engagement. Example items from the subscales are “I try hard to do well in school”, and “I enjoy learning new things in class”, respectively. Cronbach’s alphas were .77 for Behavior Engagement, .65 for Emotional Engagement, and .81 for the overall Student Engagement. While the reliability score of the Emotional Engagement subscale was below optimal, the construct showed good model fit when tested with confirmatory factor analysis (further explained in the Data Analysis section).

**Demographics.** Students reported on their age, gender, and ethnic backgrounds. Students were assigned to the *ethnic minoritized group* if they reported either of their parents as having a migration history; the rest of the students were categorized as the *ethnic majority group*.

**Data Analysis**

*Structural equation modeling* (SEM) has the advantage of testing complicated mediation models in a single analysis, simultaneously allowing for multiple independent and outcome variables (Gunzler et al., 2013). Therefore, we chose to use SEM to investigate our data. We first validated our latent constructs, namely multicultural education factors we suggested for the Culturally Responsive Teaching Scale items, and the peer relationships and student engagement factors, using *confirmatory factor analysis* (CFA). After CFA, we continued to define our *structural model* and examined its fit across two groups by looking at measurement invariance and conducting a multigroup analysis. For all of our analyses, we used the open-source statistical software *R* (RStudio Version 1.2.1335). Specifically, we used the R package *lavaan* version 0.6-5 (Rosseel, 2012) to specify, estimate, and analyze our models.

**Confirmatory Factor Analysis**

We specified reflective models (i.e., *measurement models*) for our latent constructs (i.e., multicultural education, peer relationships, and student engagement) and performed a confirmatory factor analysis (CFA) to validate the constructs. CFA tests a pre-specified model by imposing the model on data and evaluating how well the model fits the data. We chose maximum likelihood estimation to assess the model fit and handled missing data using full-
information maximum likelihood (FIML). The latent variables were restrained to have a mean of 0 and a variance of 1 (i.e., standardized) for scaling purposes, and were allowed to covary.

The fit indices indicated a good fit between the model and the observed data for the peer relations factor\(^{12}\), with the Root Mean Square Error of Approximation (RMSEA) of .09, and Standardized Root Mean Square Residual (SRMR) of .05. The comparative fit index (CFI) was .94, the Tucker-Lewis fit index (TLI) was .91. Similarly, the student engagement factors showed good fit, with an RMSEA value of .06, SRMR value of .04, CFI value of .94, and TLI value of .93.

For the three multicultural education factors derived from the Culturally Responsive Teaching Scale, the CFA results indicated a poor fit, with an RMSEA value of .23, SRMR value of .18, CFI value of .56, and TLI value of .45. Based on these results, the assumption that latent factors underlie the multicultural education items is not a tenable one as the results point to item intercorrelations that are too weak to be accounted for by a common latent factor. Instead, Culturally Responsive Teaching Scale, in our study, was conceptualized as a set of activities that make up the extent to which teachers employ multicultural education, and it is a composite measure of content integration, prejudice reduction, and equity pedagogy practices (Coltman et al., 2008). Also supported by the CFA results, this conceptualization implies a formative model wherein changes in the indicator items causes changes in the constructs rather than a reflective model wherein the indicators reflect the variation in the underlying factors.

Accordingly, we defined the multicultural education factors as formative and fixed the factor loadings to be the same for each item (at \(\Lambda = 1\)), forming content integration, prejudice reduction, and equity pedagogy factors. The peer relationships and student engagement (emotional and behavioral) factors are defined as reflective because changes in these latent constructs would precede variation in their indicators (e.g., peer relationships reflected in students’ well-being in relation to their classmates) and because the latent construct exists independent of the measures used (i.e., motivation) (Coltman et al., 2008).  

**Structural Equation Modeling**

Based on the CFA results, we expanded the measurement models by specifying the relationships between the latent variables (i.e., formed the structural model), by creating a non-saturated model, using sum scores for the multicultural education factors (content integration, prejudice reduction, and equity pedagogy) and reflective latent factors for the rest of the variables: student peer relationships, and behavioral and emotional engagement.

We initially planned on using multilevel structural equation modeling to account for the hierarchical nature of our data. In order to find support for a multilevel approach, we

\(^{12}\) We initially fitted a measurement model where positive and negative peer relationships were represented with two separate latent variables. However, these variables showed a very high negative correlation (\(r = -.77\)), reflecting very similar constructs. Thus, we decided to combine them under one latent variable. Based on CFA modification indices, two sets of items of the combined factor were allowed to covary.
examined the proportion of variance in the student-level variables that is explained by the grouping variable (i.e., teacher). We calculated the ratio of group-level error variance over the total error variance (Intraclass Correlation Coefficients; ICC1) for each item of the latent student-level factors, using the residual data set, which ranged between 0 to .006. Given the small values, we decided to use a simpler non-multilevel approach, coupled with bootstrapped standard errors, that can give us more robust results due to increased power.

At this stage of our analyses, control variables should be included in the structural model as observed variables, and their relationships to our main variables should be defined. We identified the following variables: teachers’ years of teaching, their ethnic backgrounds, gender, and whether or not they are appointed in a denominational school; and students’ ethnic background, age, and gender. Note that student ethnic background could also be considered as a moderator between teacher multicultural education factors, peer relationships, and emotional and behavioral engagement. However, the correlations per ethnic background (using mean scores) indicated no outstanding differences in the strength of the relationships for students with and without a migration history. Therefore, this variable was not considered as a moderator.

Including all these variables in our analyses would lower our power drastically, especially because we would like to test our model in two independent samples (further detailed below). In order to overcome this limitation, we have imputed our data set one time to deal with missing data, and regressed out our control variables to create a new data set with residual values, in order to run our models. This process entails running separate regression analyses predicting the main variables of interest separately using control variables and taking the residuals from these predictions to overwrite our data with residual values. We used the resulting data set from here onwards.

Identifying the Comparison Groups. Scholars differ in their definitions of classrooms/schools with low, mixed, and high concentrations of ethnic minoritized students. In the current study, we chose to define classrooms with ethnic minoritized student concentration equal to or less than 30% as low concentration (46% of the sample), 30-70% as mixed (13.8% of the sample), and 70% or higher as high concentration classrooms (40.2% of the sample) (Wielzen & van Dijk-Groeneboer, 2018). The ethnic concentration of the classrooms was defined based on student reports. However, because statistical procedures compare 2 groups at a time, and because the mixed group is comprised of only 13.8% of the sample whereas the other two groups are about three times its size, we merged the mixed and high concentration classrooms in one group. The analyses should be interpreted in light of the fact that 74.5% of the combined group has an ethnic minoritized student concentration of 70% or higher. The groups we compare are referred to as Low Concentration and High Concentration.
groups from here onwards. Correlation matrices of the Low and High Concentration groups that were used in SEM can be found in Supplementary Materials.

**Measurement Invariance.** Our specified baseline model is depicted in Figure 1 to be tested for measurement invariance between the low and high concentration groups. We followed the multistep approach during which we gradually introduced constraints to the baseline model for 1) factor loadings, 2) factor loadings and intercepts, 3) factor loadings, intercepts, and residuals respectively, to be equal across the two groups. Each model was compared to the previous one to decide on the best fitting model. Results of model comparisons are shown in Table 1. A significant $\chi^2_{\text{Diff}}$ indicate that the models differ significantly, with smaller AIC, BIC, and $\chi^2$ values indicating a better fit, and a higher $df$ indicates fewer parameters in a model, hence a more parsimonious one. The latent variables were allowed to covary, the first item of each latent variable was constrained to have a factor loading of 1 for scaling purposes.

Model 1 was significantly different from the baseline model based on the significant $\chi^2_{\text{Diff}}$ test statistic, more parsimonious based on the $df$, and a better fit based on BIC but not AIC. $\chi^2_{\text{Diff}}$ between Model 1 and 2 was not significant. However, both AIC and BIC values indicated that Model 2 fits better than Model 1 and is more parsimonious based on the $df$. Model 3 was significantly different than Model 2 based on the significant $\chi^2_{\text{Diff}}$ test statistic, more parsimonious based on the $df$, and a better fit based on BIC but not on AIC. We chose to further investigate the most constrained model, namely Model 3, as it featured the lowest BIC, comparable AIC to other models and was the most parsimonious. Our decision means that we constrained all model parameters to be equal between the low and high concentration groups, except for regression coefficients.

**Multigroup Analysis.** The multigroup analysis allows to test if groups show significant differences in their coefficient estimates. We used this analysis to test our proposition that the relationships between multicultural education, peer relationships, and student engagement can change as a function of classroom composition.

We specified a model, Model 4, that defined equal regression coefficients between the two groups, in addition to Model 3 constrains of factor loadings, intercepts, and residuals. The model without regression equality constrains (Model 3) fit the data significantly better than the model with constrains (Model 4) according to the Chi Square Test statistic, $\chi^2(11) = 32.823$, $p < .001$, and the AIC value, but not the BIC value (Table 1). Therefore, there is some evidence to suggest differences between groups. We thus investigated the differing relationships between our main variables.
Table 1
Measurement Invariance and Multigroup Analysis Model Comparison Results

<table>
<thead>
<tr>
<th></th>
<th>df</th>
<th>AIC</th>
<th>BIC</th>
<th>$\chi^2$</th>
<th>$\chi^2_{\text{Diff}}$</th>
<th>$p_{\chi^2_{\text{Diff}}}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline Model</td>
<td>470</td>
<td>39301</td>
<td>40093</td>
<td>862.58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 1</td>
<td>488</td>
<td>39315</td>
<td>40026</td>
<td>912.38</td>
<td>49.802</td>
<td>8.085e-05 **</td>
</tr>
<tr>
<td>Model 2</td>
<td>506</td>
<td>39299</td>
<td>39931</td>
<td>932.99</td>
<td>20.605</td>
<td>.299799</td>
</tr>
<tr>
<td>Model 3</td>
<td>527</td>
<td>39302</td>
<td>39840</td>
<td>977.37</td>
<td>44.378</td>
<td>.002089 **</td>
</tr>
<tr>
<td>Model 4</td>
<td>538</td>
<td>39213</td>
<td>39802</td>
<td>1010.19</td>
<td>32.823</td>
<td>.000562**</td>
</tr>
</tbody>
</table>

Note. * = $p < .05$, ** = $p < .01$

Results

Descriptive Statistics

Note that we used latent variables and sum scores in our structural models. For more comparable statistics, we calculated average mean scores per variable for descriptive statistics. The results are presented in Table 2 per concentration group and are reported separately for the majority and minoritized students when applicable.

Table 2
Average Mean Scores Per Concentration Group (SD)

<table>
<thead>
<tr>
<th></th>
<th>Low Concentration</th>
<th>High Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content Integration</td>
<td>3.38 (0.67)</td>
<td>3.51 (0.31)</td>
</tr>
<tr>
<td>Prejudice Reduction</td>
<td>3.60 (0.32)</td>
<td>3.64 (0.30)</td>
</tr>
<tr>
<td>Equity Pedagogy</td>
<td>2.52 (0.89)</td>
<td>2.93 (0.43)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Majority</th>
<th>Minoritized</th>
<th>Majority</th>
<th>Minoritized</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer Relationships</td>
<td>4.37 (0.08)</td>
<td>4.37 (0.04)</td>
<td>4.52 (0.05)</td>
<td>4.45 (0.05)</td>
</tr>
<tr>
<td>Behavioral Engagement</td>
<td>4.10 (0.06)</td>
<td>4.10 (0.04)</td>
<td>4.31 (0.05) *</td>
<td>4.17 (0.05)</td>
</tr>
<tr>
<td>Emotional Engagement</td>
<td>3.85 (0.07)</td>
<td>3.81 (0.05)</td>
<td>4.07 (0.06)</td>
<td>3.93 (0.05)</td>
</tr>
</tbody>
</table>

Note. T-test significance levels: * = $p < .05$, ** = $p < .01$. All measures were on a 5-point Likert-type scale. Majority = Majority students. Minoritized = Minoritized students.

Teachers’ mean Content Integration ($t(19.443) = -.14, p > .05$), mean Prejudice Reduction ($t(31) = -.09, p > .05$), and mean Equity Pedagogy ($t(19.601) = -.35, p > .05$) did not significantly differ between Low and High Concentration groups. The majority student’s Behavioral Engagement was significantly higher than that of the minoritized students in the High Concentration group, $t(256.377) = 2.141, p < .05$. 

Finally, compared to the Low Concentration group, students in the High Concentration group in general had significantly better Peer Relationships ($t(608) = -2.224, p < .05$), Behavioral Engagement ($t(604.620) = -2.466, p < .01$), and Emotional Engagement ($t(605.833) = -2.905, p < .01$).

**Structural Equation Models**

Following up on the multigroup analysis results that indicated that regression coefficients are not equal across Low and High Concentration classrooms, we have visualized the structural models for further interpretation in Figure 1. The significant relationships are indicated with non-dashed lines. The thicker the lines, the stronger the relationships between two variables are. The standardized regression coefficients of the significant edges are shown on the Figure 1, for the rest of the parameter values see Appendix Table B1.

In both groups, Peer Relationships are significantly related to students’ Engagement. In the Low Concentration group, the relationships are stronger, which is especially the case for Emotional Engagement. Figure 1 illustrates that for the Low Concentration group, the relationship between Content Integration and Emotional and Behavioral Engagement, and Equity Pedagogy with only Emotional Engagement were mediated by students’ Peer Relationships. The standardized indirect effect of Content Integration on Emotional Engagement ($\beta = -.20, p < .01$), and on Behavioral Engagement ($\beta = .15, p < .05$) were statistically significant. Additionally, the standardized indirect effect of Equity Pedagogy on Emotional Engagement was significant ($\beta = .11, p < .05$), and on Behavioral Engagement was marginally significant ($\beta = .09, p = .07$). In addition, Equity Pedagogy showed a weak but significant relationship with Prejudice Reduction and a strong relationship with Content Integration. Expectedly, Emotional and Behavioral Engagement showed a strong significant positive correlation.

In the High Concentration group, the direct effect of Equity Pedagogy on Emotional Engagement ($\beta = .24, p < .05$), and the direct effects of Peer Relationships on Emotional ($\beta = .23, p < .05$), and Behavioral Engagement ($\beta = .27, p < .05$), were significant. The results of the fitted model yielded no significant indirect effects in this group, as none of the relationships between the Multicultural Education factors and Peer Relationships reached statistical significance. In addition, all three Multicultural Education factors showed moderate to high positive correlations with each other. Similarly, Emotional and Behavioral Engagement were very strongly correlated.
Figure 1

Structural Equation Models

Note. The standardized regression coefficients of the significant relationships are indicated on the figures. The observed indicators for the latent student variables are omitted from the graph for clarity. * = $p < .05$, ** = $p < .01$. 
Discussion

Self-Determination Theory postulates that contexts that support students’ basic needs for autonomy, competence, and relatedness can positively affect their motivation to learn (for an overview see Reeve, 2012). We argued that multicultural education can especially help to fulfil the needs of relatedness for students, by stimulating meaningful contact (see also Intergroup Contact Theory), and therefore improve students’ engagement. Previous findings found support for the positive effect of multicultural education on student engagement but, to the best of our knowledge, the mediating role of students’ relatedness has never been tested.

In classrooms with low minoritized student concentration, we found support for this mediation hypothesis such that equity pedagogy had a positive effect and content integration had a negative effect on emotional and behavioral engagement, which was mediated by students’ peer relationships—as a proxy to relatedness. In the high concentration classrooms, however, only a direct effect of equity pedagogy on emotional engagement was found.

The Low Concentration Group

The positive influence of equity pedagogy and the negative influence of content integration on peer relationships could be due to the minoritized group individuals perceiving multiculturalism as identity supporting and status improving, while majority group individuals perceiving it to be identity and status threatening (Deaux et al., 2006).

The low minoritized student concentration emphasizes the existing inequalities in society (Leonardelli & Brewer, 2001), by putting minoritized students also in numerical minority. This does not naturally create an equal status for intergroup contact. On the contrary, it creates the basis for the majority group members to perceive themselves as highly prototypical and representative of the superordinate group, be it the classroom, school, or the Netherlands. Expanding on the Ingroup Projection Model, Steffens and colleagues (2017) previously showed that multicultural education can backfire in such intergroup contexts. Content integration requires explicit acknowledgement of different cultures and their characteristics and contributions. This can directly challenge majority group members’ perceived prototypicality of their group for the superordinate category, in an intergroup context where they are likely to perceive themselves to be highly prototypical. This has been shown to increase negative attitudes towards the outgroup (Steffens et al., 2017). Supporting their findings, our results also showed that content integration negatively influences peer relationships directly and student engagement indirectly. While prejudice reduction practices may have been able to prevent this, our results indicated that teachers who engaged in content integration did not necessarily engage in prejudice reduction (see Figure 1 or Table B1 for correlations between factors).
Low and High Concentration Classrooms: The Mediating Role of Student Relationships

Equity pedagogy, on the other hand, is a subtler way of facilitating equal status in contacting parties that can be employed without activating group differences. It disrupts existing structures that perpetuate inequality by expecting all students to learn according to the way the instruction is delivered, and instead requires tapping into students’ strengths and using tailoring teaching approaches to teach the way students learn (Banks, 1997). Therefore, it fulfills conditions of Intergroup Contact Theory under which contact can increase positive attitudes and hence can improve peer relationships, namely equal status between contact groups and support by authority figures (Allport, 1954; Pettigrew & Tropp, 2006).

We, however, can expect a larger negative effect size of content integration on peer relationships compared to the positive effect of equity pedagogy by looking at the path coefficients. Based on these effects, we would have expected the majority group members’ reported peer relationships to be more positive compared to the minoritized group students if content integration ignited intergroup bias only in the majority group. Yet, majority and minoritized students have reported to have similar average peer relationship qualities (see Table 2). This may signal to other social identity processes activated by content integration.

An explanation could be the higher ingroup favoritism and outgroup discrimination that is consistently found in numerically smaller groups (as reported in Leonardelli & Brewer, 2001), suggested to reflect the greater salience and distinctiveness associated with their small group size (Mullen et al., 1992). Informed by the same social categorization and social identity perspectives as the Ingroup Projection Model, members of such distinctive groups have been shown to be more satisfied about their ingroup compared to non-distinctive groups. This is because a distinctive group is a source of positively valued social identity as it provides sufficient inclusiveness within the ingroup and sufficient differentiation from the outgroup, fulfilling both the need to belong and the need to be unique (see Optimal Distinctiveness Theory; Bettencourt et al., 1999). Thus, activating distinctiveness of groups and providing further validation for the minoritized group through content integration might have not only led to heightened intergroup bias in the majority group but also in the minoritized group.

The High Concentration Group

Contrary to the low concentration group, in the high concentration group, the multicultural education factors did not have a significant effect on peer relationships. Nevertheless, students in this group reported to have better relationships and higher engagement compared to the students in the low concentration group. These findings may stem from more balanced intergroup interactions due to the demographic landscape of these classrooms. As such, we may no longer see the significant negative effect of content integration on peer relationships: Majority group students may no longer perceive their group to be highly prototypical of the superordinate category of classroom or school because they are in numerical minority and are thus just another ethnic group within their classrooms. Similarly, the minoritized students may no longer experience an optimal distinctiveness from
the outgroup as they are no longer in numerical minority. In turn, peer relationships in this
group are not as strongly related to student engagement, especially emotional engagement,
as they were in the low concentration group. This may signal that when relationships are less
harmonious, they may become a more central factor in students’ educational lives.

Interestingly, the reported quality of peer relationships was higher for the majority
group students compared to the minoritized group students in this group. Although this
difference was not significant, it may provide some support for the explanation based on
Optimal Distinctiveness Theory that we proposed above for the low concentration group.
Since the majority group members are mostly in numerical minority in the high concentration
classrooms, they may be experiencing more ingroup favoritism compared to the minoritized
students who are now in numerical majority. Yet, this may be to a lesser extent for the
majority group members in the high concentration group than for the minoritized students
in the low concentration group, as majority group members are still in numerical majority
outside of their classrooms and schools.

Moreover, as the contact status is likely to be more equal in this group due to
minoritized students being in the numerical majority, the positive effect of equity on peer
relationships may not be too salient. Yet, equity pedagogy was still directly related to
students’ emotional engagement. When teaching strategies and classroom environments
support student functioning equitably, regardless of their backgrounds, students seem to
enjoy and show more enthusiasm for learning. This, in turn, is highly related to behavioral
engagement, indicating that children who enjoy learning also put more effort in learning.
However, also in this group, the majority group members reported to have, on average, a
significantly higher behavioral engagement compared to their minoritized counterparts.
This is in line with previous research that points to the effects of factors such as low teacher
expectations (Gershenson et al., 2016) or more challenging social environments in and out
of school (Randolph et al., 2004) for the minoritized students, which we did not cover within
the scope of this study.

Lastly, in the high concentration group, teachers who engaged in one aspect
of multicultural education seem to have engaged also in others. In line with previous
research that found multicultural education to be more prevalent in high concentration
classrooms (Agirdag et al., 2016), teachers in this group also engaged on average, more in
multicultural education than teachers in the low concentration group (see Table 2). Attention
to multicultural education in these classrooms may simply be a natural outcome of the
classroom demographics.

**Both Groups**

In both concentration groups, our results supported the propositions of Self-
Determination Theory in that peer relationships, as a proxy to relatedness, were positively
related to both emotional and behavioral student engagement. However, multicultural
education factors would have been expected to also have direct effects on student engagement due to their possible influence on other basic psychological needs than relatedness, namely autonomy and competence. Previous research showed that teachers’ own attitudes can moderate the effect of multicultural practices on student engagement such that only teachers who lead by being an example themselves and practice what they preach are thought to be able to have a positive effect on students (Abacioglu, Zee, et al., 2019). This may explain the lack of significant relationships in our case. Content integration and prejudice reduction necessitate teachers to explicitly talk about issues around diversity and engage in dialogue that may expose their own stance in these topics, which may not seem authentic to students in certain cases such as employing these practices due to school policy without necessarily having the important insights into the realities of their students (Kreber, 2010).

Limitations and Future Research

While not the primary goal of this study, our results signaled varying effects of multicultural education on peer relationships and engagement, based on the intergroup context where, most probably, different social identity processes in majority and minoritized students were activated. It seems that minoritized students in low concentration classrooms may benefit more from multicultural education, but at the same time, it may also be met with resistance by majority group members. However, in order to further validate the interpretation of our results, important variables such as ingroup identification and satisfaction, as well as classroom diversity (i.e., how many different groups there are) and ingroup size should be considered in relation to peer relationships (Leonardelli & Brewer, 2001). Moreover, status of the outgroup and its relationship to the ingroup has been suggested to be relevant for such research (Steffens et al., 2017). Furthermore, how multicultural education affects peer relationships may not only depend on how responsive students are to multiculturalism, but also on teachers’ knowledge, attitudes, and skills through which they implement multicultural practices (Gay, 2002). For instance, the most popular ways in which content integration is implemented are through a ‘contributions approach’ or an ‘additive approach’. These entail either insertion of isolated facts about or special units on minoritized groups to the curriculum, without the meaningful transformation of the curriculum that requires viewing information from different perspectives (i.e., ‘transformation approach’), reinforcing the notion that minoritized groups are not integral parts of the mainstream (Banks, 1997).

Additionally, it is important to gain deeper insights into the mechanisms underlying the effect of multicultural education on student engagement through peer relationships by comparing mixed concentration classrooms (30-70% minoritized student concentration) to classrooms with low (equal to or below 30%) and high minoritized student concentrations (equal to or above 70%). However, our sample size was not big enough to compare three different groups with each other, which was especially the case for the mixed concentration
classrooms. We urge future researchers to conduct more detailed investigations of the suggested psychological processes behind our results.

If multiculturalism backfires for the majority group members in intergroup contexts in which minoritized individuals might need it the most, how can we prevent resistance to multicultural practices? This is a relevant question especially for teachers, as content integration tends to be the most widely implemented aspect of multicultural education (Zirkel, 2008). Studies around organizational diversity have previously suggested that by explicitly including majority group in the organization’s diversity approach with all-inclusive multiculturalism (Stevens et al., 2008), majority members’ perceived lack of inclusion and resistance to their organization’s diversity efforts can be mitigated (Jansen et al., 2015). Notwithstanding its preventive effects on majority groups, its effects however have not been tested with minoritized groups (for an exception on the effects of all-inclusive versus women-targeted gender practices on women and men, see Cundiff et al., 2018), and may be perceived as diverting the attention from the real issue of under- or misrepresentation of the latter group as in the case of, for instance, the divergent “all lives matter” discourse (Brannon et al., 2018).

An alternative could be to implement citizenship education and multicultural education in combination. Previous research that found negative effects of activating the diversity of the superordinate category on the majority group members tested this against the effects of activating the unity of the superordinate category (Ehrke & Steffens, 2015; Steffens et al., 2017; Waldzus et al., 2003, 2005). These two conditions, however, do not need to compete with each other. Multicultural policies and practices, not as an alternative but in conjunction with citizenship education that centers around shared values such as democracy, equality, and human integrity (Mattei & Broeks, 2018), can be an essential tool to expedite “unity in diversity” (Bokhorst-Heng, 2007). It would be fruitful to investigate the combined effect of these practices on peer relationships and motivation.

Moreover, the above-mentioned research looked at the effect of mere priming messages that reflected unity or diversity and the current research used cross-sectional data. The effects of educational practice for an extended period of time, however, can yield different results that need to be unwrapped by using a longitudinal design.

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14 This refers to the Black Lives Matter social movement that started in 2012 and gained worldwide attention in 2020. In the context of present and historical inequalities, chanting “Black lives matter” distinguishes minoritized individuals from the rest in order to stress that not “all lives” mattered until this day, and particular attention needs to be paid to the inequalities experienced by these individuals (Brannon et al., 2018).
Conclusion

The current study uses insights from Intergroup Contact Theory and Self-Determination Theory (SDT) to explain how multicultural education can improve student motivation and engagement through peer relationships. We also used insights from the Ingroup Projection Model to investigate how the effects of multicultural practices can change, depending on the intergroup context. Insights from this research can further our understanding of how we can mitigate challenges of outgroup peer inclusion and academic achievement of minoritized students. Moreover, we contribute to the SDT literature by focusing on the relatively understudied relationship between relatedness and engagement in primary school aged children, compared to the other two basic needs put forward by the SDT (i.e., autonomy and competence; for exceptions see Hughes et al., 2014; Madill et al., 2014).

Our findings indicate that some types of multicultural education can improve, and other types can impede student engagement through peer relationships, depending on the intergroup context. Our results are a good reminder that while representation of minoritized perspectives and lives are important, challenging the structures that perpetuate inequality (through equity pedagogy) may make the most difference by creating equal opportunities for individuals to thrive.
# Appendix A

## Table A1

*Culturally Responsive Teaching (CRT) Scale*

<table>
<thead>
<tr>
<th>CRT Scale Items</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRT1. Adjust instructions to cater to the needs of my students.</td>
<td>CI</td>
</tr>
<tr>
<td>CRT3. Assess whether my students rather work alone or in a group.</td>
<td>PR</td>
</tr>
<tr>
<td>CRT5. Identify aspects in which the school culture (for example, values, norms, and practices) differs from the home culture of my students.</td>
<td>EP</td>
</tr>
<tr>
<td>CRT12. Establish community between students when my class exists of students from various backgrounds.</td>
<td>PR</td>
</tr>
<tr>
<td>CRT13. Use the cultural background of my students to make learning meaningful.</td>
<td>CI</td>
</tr>
<tr>
<td>CRT16. Obtain information regarding the cultural background of my students.</td>
<td>CI</td>
</tr>
<tr>
<td>CRT19. Design a classroom environment with attributes that represent a variety of cultures.</td>
<td>CI</td>
</tr>
<tr>
<td>CRT26. Help students establish positive relationships with their classmates.</td>
<td>PR</td>
</tr>
<tr>
<td>CRT27. Revise educational materials to improve its' representation of cultural groups.</td>
<td>CI</td>
</tr>
<tr>
<td>CRT30. Design tasks in the classroom in a way which helps improve the understanding of students studying Dutch.</td>
<td>EP</td>
</tr>
<tr>
<td>CRT32. Help students feel like an important member of the classroom.</td>
<td>PR</td>
</tr>
<tr>
<td>CRT33. Identify ways in which standardized tests can be prejudiced against culturally different students.</td>
<td>EP</td>
</tr>
<tr>
<td>CRT35. Make use of examples that are relatable for students from culturally different backgrounds.</td>
<td>EP</td>
</tr>
</tbody>
</table>

>Note. CI = Content Integration, PR = Prejudice Reduction, EP = Equity Pedagogy
# Appendix B

**Table B1**  
*Standardized Path Coefficients from the Structural Equation Models*

<table>
<thead>
<tr>
<th>Path</th>
<th>Low Concentration</th>
<th>High Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content Integration to Emotional Engagement</td>
<td>β = -.08, p &gt; .05</td>
<td>β = -.11, p &gt; .05</td>
</tr>
<tr>
<td>Prejudice Reduction to Emotional Engagement</td>
<td>β = -.02, p &gt; .05</td>
<td>β = -.08, p &gt; .05</td>
</tr>
<tr>
<td>Equity Pedagogy to Emotional Engagement</td>
<td>β = -.03, p &gt; .05</td>
<td>β = .24, p &lt; .05</td>
</tr>
<tr>
<td>Peer Relationships to Emotional Engagement</td>
<td>β = .43, p &lt; .01</td>
<td>β = .23, p &lt; .05</td>
</tr>
<tr>
<td>Content Integration to Behavioral Engagement</td>
<td>β = -.05, p &gt; .05</td>
<td>β = -.02, p &gt; .05</td>
</tr>
<tr>
<td>Prejudice Reduction to Behavioral Engagement</td>
<td>β = -.11, p &gt; .05</td>
<td>β = -.07, p &gt; .05</td>
</tr>
<tr>
<td>Equity Pedagogy to Behavioral Engagement</td>
<td>β = .03, p &gt; .05</td>
<td>β = .11, p &lt; .05</td>
</tr>
<tr>
<td>Peer Relationships to Behavioral Engagement</td>
<td>β = .33, p &lt; .01</td>
<td>β = .27, p &lt; .05</td>
</tr>
<tr>
<td>Content Integration to Peer Relationships</td>
<td>β = -.46, p &lt; .01</td>
<td>β = .08, p &gt; .05</td>
</tr>
<tr>
<td>Prejudice Reduction to Peer Relationships</td>
<td>β = .01, p &gt; .05</td>
<td>β = .02, p &lt; .05</td>
</tr>
<tr>
<td>Equity Pedagogy to Peer Relationships</td>
<td>β = .25, p &lt; .05</td>
<td>β = .08, p &gt; .05</td>
</tr>
<tr>
<td>Between Emotional and Behavioral Engagement</td>
<td>β = .72, p &lt; .01</td>
<td>β = .89, p &lt; .01</td>
</tr>
<tr>
<td>Content Integration to Peer Relationships to</td>
<td>β = -.20, p &lt; .01</td>
<td>β = .02, p &gt; .05</td>
</tr>
<tr>
<td>Emotional Engagement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prejudice Reduction to Peer Relationships to</td>
<td>β = .01, p &gt; .05</td>
<td>β = .01, p &gt; .05</td>
</tr>
<tr>
<td>Emotional Engagement</td>
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<td></td>
</tr>
<tr>
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<td>β = .11, p &lt; .05</td>
<td>β = .02, p &gt; .05</td>
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<tr>
<td>Emotional Engagement</td>
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<tr>
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<td>β = -.15, p &lt; .05</td>
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<td>Behavioral Engagement</td>
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</tr>
<tr>
<td>Prejudice Reduction to Peer Relationships to</td>
<td>β = .01, p &gt; .05</td>
<td>β = .01, p &gt; .05</td>
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<tr>
<td>Behavioral Engagement</td>
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<tr>
<td>Equity Pedagogy to Peer Relationships to</td>
<td>β = .09, p &gt; .05</td>
<td>β = .02, p &gt; .05</td>
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<td>Behavioral Engagement</td>
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</table>
Which teachers are more likely to adopt a multicultural approach?
Teachers play an important role in students’ educational trajectories. As a consequence, their approach to diversity in the classroom might contribute to an unfavorable educational position for ethnic minority students. The current study tested whether teachers in Dutch primary schools differed in their interventions towards ethnic minority students compared to ethnic majority students for the same kind of misbehavior and whether this difference was related to their multicultural attitudes and their abilities to recognize and interpret emotions. Teachers responded to scenarios depicted in vignettes, describing student misbehaviors, by providing the frequency with which they would engage in various intervention strategies. Our results yielded no significant differences in teachers’ intervention strategies to student misbehaviors based on students’ ethnic background. A notable finding was that teachers’ multicultural attitudes were related to their intervention strategies: an increase in teachers’ positive multicultural attitudes predicted an increase in relatively tolerant (e.g., discussing the misbehavior) as opposed to more dismissive intervention strategies (e.g., sending the student out of class). This finding may suggest that demonstrating positive attitudes towards multiculturalism reflects an awareness of and comfort with cultural diversity, as well as general understanding of individual differences between students and their behaviors.

This chapter is based on:

CHAPTER 5

Teacher Interventions to Student Misbehaviors: The Role of Ethnicity, Emotional Intelligence, and Multicultural Attitudes
Chapter 5

Ethnic minority students in Europe, while steadily improving their achievement, still continue to have an unfavorable educational position compared to their ethnic majority counterparts. They perform more poorly, have lower levels of retention and attainment, and thus are overrepresented in lower level and vocational tracks (OECD, 2014). Even after controlling for their educational performance, ethnic minority students are less frequently recommended by their teachers for the higher-level educational tracks (Glock & Karbach, 2015). As teachers can play an important role in shaping students’ educational trajectories, how they navigate diversity in their classrooms might contribute to the unfavorable educational position of the ethnic minority students.

Daily interactions in and around the classroom have been suggested to have at least an equally high impact on students’ educational functioning as formal instruction does (Crystal, Killen, & Ruck, 2010; Verkuyten & Thijs, 2013). Previous research suggested that teachers often react differently to students with a minority compared to a majority background during their daily interactions (e.g., classroom management; Glock, 2016). The social and emotional functioning of teachers during these interactions can contribute to students’ social as well as educational functioning, including children’s motivation and educational achievement (Brown et al., 2010; Roorda et al., 2011). Therefore, it is valuable to investigate potential reasons for unfair treatment of students with ethnic minority backgrounds. The Netherlands, where the current research is conducted, stands out amongst other European countries: migrants and minorities maintaining their cultural identities has increasingly been seen as holding them back from socio-economic mobility. Multiculturalism is thus perceived as a threat to their integration into the Dutch society (Rijkschroeff et al., 2005); and, although support for multiculturalism and multicultural policies are showing modest increases in other parts of Europe, it has been decreasing in the Netherlands (Banting & Kymlicka, 2013). This may suggest a lack of awareness on the part of the teachers of the need to acknowledge cultural diversity.

A multicultural approach to diversity, on the other hand, acknowledges and values diversity and favors equal educational opportunities for students, no matter their backgrounds (Banks, 2004). Teachers who have positive multicultural attitudes are more likely to recognize and value cultural differences between students, and are more likely to be aware of their own biases that might affect their judgments (Ponterotto, Baluch, Greig, & Rivera, 1998). In addition, teachers’ sensitivity to emotional cues can help to recognize and interpret students’ feelings and intentions, and can thus promote more accurate judgments (Brackett & Katulak, 2007; Lee et al., 2016).

With the current study, we therefore aimed: 1) to investigate whether teachers in Dutch primary schools differ in their interventions toward ethnic majority versus ethnic minority children, and 2) to examine whether teachers’ multicultural attitudes and their abilities to attend to, recognize, and correctly interpret emotions (emotional intelligence) can account for these differences.
Teacher Interventions to Student Misbehaviors

Classroom management constitutes a major challenge for teachers. It has been previously reported that 30 to 80 percent of teachers’ time can be spent addressing student misbehaviors (Levin & Nolan, 2014). The most commonly listed misbehaviors by teachers are negative attitudes including emotional, verbal, or physical bullying, lack of concentration/daydreaming/idleness, disobedience, being late to class, talking out of turn or chatting during the lesson (e.g., Iran: Aliakbari, Mirzaee, & Aliabadi, 2013; US: Beaman, Wheldall, & Kemp, 2007; UK: Houghton, Wheldall, & Merrett, 1988; Spain: Kyriacou & Martin, 2010; Australia: Little, 2005; Norway: Stephens, Kyriacou, & Tønnessen, 2005; China: Sun & Shek, 2012; Turkey: Türnüklü & Galton, 2001). Previous research on classroom management strategies has shown that these misbehaviors are more easily prevented if teachers give positively stated directives that describe the expected behaviors from the students, instead of instructing what not to do (Kerr & Nelson, 2002). Positive relationship between students and teachers, and positive reinforcement of appropriate behavior are especially emphasized as key to promoting desirable behaviors and reaching positive educational outcomes (De Jong, 2005).

It has been widely documented, however, that teachers are more likely to have positive interactions with majority group students than with minority group students (Thijs et al., 2012). Minority students receive less attention, praise, feedback, and emotional support from their teachers than their ethnic majority peers (Gay, 2000). These students, in addition, are more often subjected to disciplinary sanctions, and are treated more harshly (e.g., with office referral, suspension, and expulsion), even after controlling for achievement and behavior (Peguero & Shekarkhar, 2011; Rocque & Paternoster, 2011). The findings, however, seem to differ depending on the ethnic background of the students. In the U.S., African-American and Hispanic students fit this trend, whereas students from some Asian countries tend to be exceptions (Skiba, 2015). While most research on the topic is conducted in the US, studies from Europe suggest that ethnic minorities residing in Europe might fit the overall pattern of unfair treatment. Glock (2016), for instance, investigated how likely German pre-service teachers were to apply varying intervention strategies to the same misbehavior of ‘talking out of turn’, when students’ names were varied to reflect either an ethnic minority or a majority student. The author showed that teachers were more likely to apply harsh (compared to moderately harsh and mild) intervention strategies to ethnic minority students. Weiner (2016) similarly showed that in a Dutch primary school, Turkish and Surinamese ethnic minority children were most likely to be subjected to negative classroom practices, such as call outs, discouragement, silencing, and disciplinary actions.

Yet, with the exception of one qualitative study (see Weiner, 2016), there are, to our knowledge, no studies investigating teachers’ different intervention strategies to ethnic minority students in the Netherlands—in a context with decreasing support for multiculturalism. We therefore tested the hypothesis that (H1) teachers in Dutch primary schools differentially react to the same kind of student misbehavior, depending on the ethnic
background of the student. More specifically, we expected that H1a) Teachers choose milder intervention strategies (do nothing or discuss the misbehavior) more frequently toward ethnic majority students than toward minority students for the same kind of misbehavior; and H1b) Teachers choose harsher intervention strategies (warn the student, send out of the classroom, or contact the parents) more frequently toward ethnic minority students than toward majority students for the same kind of misbehavior.

**Accounting for Differences in Teacher Interventions**

A second question is what may explain teachers’ differing intervention strategies based on students’ ethnic background. An obvious explanation is that the differences are due to ethnic minority students’ higher rates of misbehavior compared to that of the ethnic majority (Skiba, 2015). While some studies showed that ethnic minority students engaged in problematic behaviors more often than the ethnic majority (e.g., Demanet & Van Houtte, 2012), other research on teacher-reported problem behavior in Turkish immigrant and Dutch children revealed no significant differences between the two groups in showing problematic behavior in the classroom, including social problems, attention problems, and delinquent and aggressive behavior (Crijnen et al., 2000).

In light of lacking consensus on actual differences in misbehavior, what explains how teachers react differently to misbehaviors of students with different backgrounds? One such factor could be the potential misunderstandings between students and teachers with different ethnic backgrounds, which has been listed by previous research in the Netherlands as one of the biggest challenges of diversity in education (van Tartwijk et al., 2009). Indeed, there is evidence that teachers often classify disruptive behaviors differently for majority and minority group students, and therefore respond more severely towards misbehaviors of ethnic minority children than towards identical behaviors of ethnic majority children (Ferguson, 2001).

We argue that teachers may therefore differ in their awareness, knowledge, and skills in dealing with problematic behavior. In particular, some attitudes and skills could allow them to comprehend students with different backgrounds better, and to promote an open and tolerant learning atmosphere towards being different. We therefore investigated two factors that may explain differences (if any) in teacher intervention strategies to misbehaviors of students from different ethnic backgrounds: multicultural attitudes and emotional intelligence.

**Multicultural Attitudes**

Previous research has shown that teachers both expect and report on ethnic minority students to engage in more negative behaviors (Downey & Pribesh, 2004; Pigott & Cowen, 2000) amongst which are disruptive behavior, inattentiveness, and not completing homework (Weiner, 2016). It has been suggested that cultural misunderstandings and social biases contribute to these negative teacher perceptions when interacting with students from
different cultural backgrounds (Thijs et al., 2012). Indeed, in order to deal with the richness of information, we use our mental schemas about the world to process all information (Pickens, 2005). These mental schemas, however, are informed by cultural assumptions and tend to bias judgments regarding appropriate behavior. These biases distort not only the perception of current behavior but also the expectations of future behavior (Gawronski et al., 2003).

Consequently, the intervention strategies that teachers find appropriate seem to also differ. Skiba and colleagues (2002) suggested that teachers with negative ethnic stereotypes – a set of characteristics attributed to a group or a member of that group (Dovidio et al., 2010), tend to react quicker and more severely to minority students’ misbehaviors. Similarly, Ferguson (2001) reported that ethnic minority students are punished more often whereas ethnic majority students receive more positive interventions. Using semi-structured interviews with teachers, Gregory and Mosely (2004) found that only less than 10% of the teachers considered how diversity issues were reflected in their beliefs and classroom practices when accounting for the disparities in their intervention strategies. The authors further argued that such a colorblind approach to diversity harms students as it fails to acknowledge their realities (e.g., discrimination) and allows teachers to disregard internalized beliefs that may influence their practices. Therefore, recognizing and valuing different perspectives, belief systems, and cultures, and understanding that one’s own values, beliefs, and attitudes might be biased can decrease the likelihood of misinterpretations and the use of unfair intervention strategies (Weinstein et al., 2004).

In the current study, we measured multicultural attitudes to capture these teacher qualities. Following Ponterotto and colleagues (1998, p. 1003), we define multicultural attitudes as “the level of comfort with and general attitudes towards cultural diversity in the classroom”. Teachers who hold positive multicultural attitudes are more aware of, sensitive to, and willing to embrace interpersonal differences and issues that accompany diversity, and are more aware of their own biases that may lead to unequitable outcomes (Ponterotto et al., 1998). We therefore expected that (H2) teachers who hold more positive multicultural attitudes would differ less in their interventions towards majority versus minority group children’s misbehaviors.\(^{15}\)

**Emotional Intelligence**

The role of emotions in educational contexts has been slow to gain attention (Schutz & Pekrun, 2007) even though accurate emotion perception has been proposed to be crucial for interpersonal interactions (Fischer & Manstead, 2008; Fridlund, 1994; Keltner & Haidt, 1999; Scherer, 1988; Van Kleef et al., 2004) Emotional displays can rapidly and reliably convey

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\(^{15}\) In saying this it should be note that we do not claim a general colorblind approach to diversity. Rather, our hypothesis is specific to the intervention strategies identified and used in our study, which are not reinforcing in their nature.
information about others’ mental states, intentions, and inclinations (Fridlund, 1994; Keltner & Kring, 1998).

The recognition and interpretation of emotion expression, however, might differ depending on implicit stereotypes or expectations. Elfenbein and Ambady (2002) showed that people are less accurate in recognizing emotions from members of another ethnic group. For example, teachers may interpret looking away either as a sign of shame or of indifference, depending on the ethnic background of the student (Kommattam et al., 2017). Townsend (2000) similarly suggested that majority group teachers in the U.S. might misinterpret passionate or emotive interactions as hostile or argumentative if they are unfamiliar with the interactional patterns of the African American culture. Another study by Fu and colleagues (2012) revealed that depending on their implicit biases, Chinese participants differed in their intensity ratings of Caucasian people’s facial expressions of anger, fear, and sadness. Such lack of accurate emotion perception can seriously hamper communication of social information, negatively influence teacher judgments, and contribute to the disadvantaged educational position of ethnic minority students.

We argue that teachers who have higher emotional intelligence— in other words who are better in attending to, recognizing, and correctly interpreting others’ emotional signals, as well as recognizing, understanding, and managing one’s own emotions (Salovey & Mayer, 1990)—would differ less in their interventions to student misbehaviors. However, we expect this to be the case only if they are also aware that cultural differences between the majority and the minority culture and teachers’ own social biases can affect their emotion perceptions, recognitions, and interpretations. Therefore, we expect (H3) an interaction effect between teachers’ multicultural attitudes and their emotional intelligence in accounting for any differences in their interventions to ethnic minority versus ethnic majority students.

The Present Research

The aim of the present research was two-fold. Firstly, to examine whether teachers differ in their interventions to misbehaviors of students with different ethnic background and secondly, whether these differences are related to multicultural attitudes and emotional intelligence.

Our target group was primary school teachers. In Dutch primary schools, children usually have one or two teachers throughout the school year, which increases individual teachers’ impact on student outcomes (Geerlings et al., 2017). Additionally, the Dutch educational system is characterized by hierarchical tracking, which allocates students to different tracks according to their primary school performance at the beginning of secondary education. Each track has consequences for access to either vocational or higher education. Therefore, it is important to map out factors that may influence student motivation and achievement starting from primary school years. Moreover, primary school years are
important years in children’s developmental trajectories. The associations children make around these ages have long-term consequences because of their effect on the development of their social identity (Swanson et al., 2009).

We focused on teachers’ intervention strategies to students with no migration history (i.e., ethnic majority Dutch) versus students with a migration history from Morocco. This ethnic group is (i) one of the largest ethnic groups in the Netherlands, forming 5% of the Dutch population together with students with a migration history from Turkey, (ii) there are noteworthy cultural and religious differences compared to the ethnic majority group, oftentimes making them the target of negative discourse and ethnic victimization, and (iii) their educational position consistently lags behind that of their majority group counterparts (Van Den Bergh et al., 2010).

Based on previous findings, we controlled for teacher background characteristics that might influence their responses to student misbehaviors: we asked teachers to report on their own ethnic background, as Downey and Pribesh (2004) showed that in cases where the background of the teachers is the same as that of their students, teachers may perceive student misbehavior more favorably. In addition, we included teachers’ years of teaching experience in our study as compared to more experienced teachers, beginning teachers may find navigating diversity more challenging (van Tartwijk et al., 2009). Moreover, teachers’ age and gender were also included in the study since younger teachers are more likely to use conflict-avoiding intervention strategies (e.g., ignoring, time out) especially if the teachers are male (He, 2013). Lastly, we included the ethnic composition of classrooms in our study, because ethnic minority students are most likely to experience unequal interventions on their behaviors in contexts that are comprised predominantly of majority group members (Edwards, 2016). Teachers in diverse classrooms may develop more knowledge and/or positive multicultural attitudes; hence, they might have fewer misunderstandings with ethnic minority students as a result of increased exposure to different cultures (Allport, 1954; Pettigrew & Tropp, 2006).

**Method**

**Participants**

Primary school teachers were recruited from cities in all regions of the Netherlands through an online advertisement targeting our specific sample. All participants were given the option to participate in a lottery from which one sixth of the participants would be randomly chosen and would receive a €50 reward in exchange for their participation. In total, 148 primary school teachers completed the study, 136 of which were female (92%, $M_{\text{age}} = 42.2, SD = 10.92$), 11 were male (7%, $M_{\text{age}} = 46.82; SD = 14.28$), and one person’s gender was not reported. Ninety-six percent of the participants were Dutch, whereas the rest of
the participants indicated other primary ethnic identification (2%) or did not provide any information (2%).

Procedure

For the measurement of teachers’ intervention strategies, we conducted a pilot study with 25 participants that we reached through an online advertisement targeting teachers in Dutch primary schools located in Amsterdam. With this pilot study, we wanted to find out about the student misbehaviors that teachers experience in their classrooms and their intervention strategies in response to these misbehaviors. Using a free association paradigm to investigate which specific student behaviors teachers associate with problematic situations allowed us to get an understanding on the current state of affairs in Dutch primary school classrooms. Based on the findings (see supplementary materials for a detailed description), we created six scenarios described in vignettes based on the most frequently reported student misbehaviors. We also created five intervention strategies for each of these scenarios based on the most frequently reported teacher intervention strategies.

As part of the main study, participants filled in an online survey comprising of four instruments, which together lasted about 15 minutes to complete. Informed consent was obtained at the beginning of the online survey, which resulted in immediately ending the survey if the participant did not wish to proceed. Participation was voluntary and anonymous.

While the other three instruments were formulated as questionnaires, teacher intervention strategies were measured by providing participants with vignettes, created based on the most frequently reported classroom misbehaviors from the pilot study (further detailed below).

Measures

The initial design of the study also included an Implicit Association Task (Greenwald et al., 1998) as an implicit measure of teachers’ attitudes. However, we have observed very high drop-out rates, which appeared to be caused by participants’ reluctance towards completing this task, due to a lack of trust in its validity. We therefore dropped the task and re-started the data collection, without including the IAT in the study design. Our analyses do not contain data from the dropped-out participants.

Teacher Intervention Strategies

Teachers responded to six scenarios depicted in vignettes describing the following student misbehaviors: not cooperating with others, showing verbal aggression, hindering others, disrespecting the teacher, being non-attentive/daydreaming/idleness, and being out of seat (see supplementary materials for the full description). Each vignette scenario had two versions, which slightly differed in their descriptions (therefore 12 vignettes in total). The matching versions of the scenarios involved either a student with no migration history (i.e.,
six vignettes with ethnic majority, Dutch) or a student with a migration history from Morocco (i.e., six vignettes with ethnic minority, Moroccan-Dutch), signaled by the students’ names (e.g., Joris, Hassan respectively).

The presentation of the vignettes was counterbalanced. Every participant received both versions of each scenario randomly with either an ethnic majority or an ethnic minority name (i.e., either version 1 for scenario 1 as ethnic majority or version 2 for scenario 1 as ethnic majority) such that half of the versions 1 for each scenario were presented with an ethnic majority name and the other half with an ethnic minority name. Independent from this randomization, half of the matching scenarios were randomly assigned a male name (e.g., Joris, Hassan) while the other half was assigned a female name (e.g., Marlous, Fatima)–either an ethnic majority or minority name depending on the version. As a last step, the presentation orders of the 12 vignettes were randomized per participant.

Each participant responded to these twelve vignettes by providing an answer to the question how often they would engage in each of the provided intervention strategies, on a scale from 0 to 100 (0: never, 100: always), if they were faced with the described scenario. The same intervention options were provided for every vignette scenario: do nothing, warn, expel, discuss, and contact parents. The internal consistency of each intervention across vignettes were adequate, ranging between $\alpha = .81 - .92$.

**Teachers’ Multicultural Attitudes**

We used the Teacher Multicultural Attitude Survey (TMAS; Ponterotto, Baluch, Greig, & Rivera, 1998) to assess the multicultural attitudes of teachers. TMAS is comprised of 20 statements, seven of which are reverse scored (3, 6, 12, 15, 16, 19, and 20). Some example statements include “I find the idea of teaching a culturally diverse group rewarding” and “when dealing with bilingual students, some teachers may misinterpret different communication styles as behavior problems”. Participants replied to the statements on a 5-point Likert-type scale (1: strongly disagree, 5: strongly agree). TMAS has low social desirability contamination, and its construct validity has been tested using convergent correlations with racial equity issues in society (measured by the Quick Discrimination Index; Ponterotto et al., 1995) and positive attitudes toward other racial/ethnic groups (measured by the Multigroup Ethnic Identity Measure, Other Group Orientation subscale; Phinney, 1992) with $r = .45$ and $r = .31$ respectively (Ponterotto et al., 1998). A total multicultural attitudes score was calculated per participant, with higher scores indicating more positive multicultural attitudes and higher awareness of issues around diversity ($\alpha = .86$).

**Teachers’ Emotional Intelligence**

We used both self-report and performance-based measures to tap emotional intelligence.
**Self-Reported Emotional Intelligence.** We used Schutte’s Self-Report Emotional Intelligence Test (SSEIT; Schutte et al., 1998) to assess teachers’ emotional intelligence. SSEIT consists of 33 statements, based on a 5-point Likert-type scale (1: strongly disagree, 5: strongly agree). Three items are reverse scored (5, 28, and 33). Some example statements include “I am aware of my emotions as I experience them” and “it is difficult for me to understand why people feel the way they do”. A total emotional intelligence score was calculated per participant, with higher scores indicating higher emotional intelligence ($\alpha = .82$).

**Performance-Based Emotional Intelligence.** We used Amsterdam Emotion Recognition test (AERt), which assessed the correct recognition and interpretation of basic emotional expressions via prototypical communicative facial signals. The AERt consists of 36 still pictures, derived from the Amsterdam Dynamic Facial Expression Set (Van Der Schalk et al., 2011). It includes both North-European (Dutch) and Mediterranean (Moroccan-Dutch) faces displaying anger, contempt, fear, joy, pride, shame, disgust, surprise, and sadness. For each of the nine emotions, one male and one female North-European and Mediterranean face were randomly presented to the participants. The intensity of emotion displays was similar for all faces. The answer options were as follows: anger, contempt, fear, pride, shame, disgust, or something else. Participants’ percentages of correct responses were calculated per person.

**Demographics**

Participants were asked to report on relevant individual and school characteristics. These included teachers’ age, sex, ethnic background, years of teaching experience, and ethnic minority percentage in their classroom and in their school. Some of the demographic variables were excluded from the analyses (explained further below), and the variables that were included have been treated as continuous.

**Analytical Approach**

In order to determine whether there are any differences in multiple dependent variables (i.e., teacher intervention strategies) between two different versions of the same scenario depicted in the vignettes (i.e., ethnic minority versus majority student version), we will perform a repeated measures multivariate analysis of variance with and without covariates.

Firstly, in order to test our first hypothesis, teachers’ mean intervention frequencies will be submitted to a 2 (type of teacher intervention strategy: dismissive vs. tolerant) x 2 (students’ ethnic background: ethnic majority vs. ethnic minority) within-subjects multivariate analysis of variance without any covariates (MANOVA). Next, if we find any differences between the frequencies of teachers’ interventions towards ethnic majority versus minority students, we will test our second and third hypotheses by performing the same analysis with multicultural attitudes, and with multicultural attitudes’ interaction with emotional intelligence variables as additional covariates (MANCOVA). For our model, we will use Type III sums of squares in
order to tease out the unique effects of our variables after controlling for any other effects on the differences in teacher interventions.

One the one hand, a within-subjects approach might make teachers relatively more aware of the aim of our study. On the other hand, it was not ecologically valid to assume that half of the teachers in service deals with students only with a migrant background and the other half deal with students only without a migrant background. In order to investigate whether the same teachers change their approach when they deal with students with differing backgrounds, the use of within-subjects design was warranted. We believe that the counterbalancing and the variation in the wording of the vignettes, and a sensitive response scale (i.e., 0-100 continuous instead of e.g., 1-5 Likert-type) allowed us to reach somewhat unbiased responses even if participants were inclined to respond in a socially desirable manner.

Results

Teacher Intervention Strategies

For each vignette (12 in total), participants indicated how often (ranging from 0 to 100), they would engage in each of the Intervention Strategies if they would be faced with the described misbehavior. Per Intervention Strategy (5 in total), teachers’ answers were examined for consistency across the 12 vignettes. Cronbach’s alphas indicate high consistency for all Intervention Strategies, ranging between .81 and .92. Therefore, we averaged the frequencies for each Teacher Intervention Strategies across 6 vignette scenarios, separately for the ethnic majority and ethnic minority targets for further analyses (Table 1). On average, the Intervention Strategy that teachers engaged in the most was discussing the misbehavior with the student, and the least frequent one was doing nothing.

Table 1

<table>
<thead>
<tr>
<th>Teacher Interventions</th>
<th>Mean</th>
<th>SD</th>
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<tbody>
<tr>
<td>Do Nothing – Ethnic Majority</td>
<td>12.78</td>
<td>17.05</td>
</tr>
<tr>
<td>Do Nothing – Ethnic Minority</td>
<td>11.49</td>
<td>16.34</td>
</tr>
<tr>
<td>Warn - Ethnic Majority</td>
<td>52.11</td>
<td>25.58</td>
</tr>
<tr>
<td>Warn – Ethnic Minority</td>
<td>51.79</td>
<td>24.61</td>
</tr>
<tr>
<td>Expel – Ethnic Majority</td>
<td>23.60</td>
<td>15.88</td>
</tr>
<tr>
<td>Expel – Ethnic Minority</td>
<td>23.88</td>
<td>16.78</td>
</tr>
<tr>
<td>Discuss – Ethnic Majority</td>
<td>73.05</td>
<td>19.39</td>
</tr>
<tr>
<td>Discuss – Ethnic Minority</td>
<td>73.13</td>
<td>17.20</td>
</tr>
<tr>
<td>Contact Parents – Ethnic Majority</td>
<td>52.02</td>
<td>27.00</td>
</tr>
<tr>
<td>Contact Parents – Ethnic Minority</td>
<td>53.20</td>
<td>25.66</td>
</tr>
</tbody>
</table>

Note. The teacher intervention frequencies are rated on a scale from 0 to 100.
Chapter 5

There were quite a number of correlations between the five Teacher Intervention Strategies\footnote{In order to study the difference in teacher intervention strategies toward male and female students, we conducted two separate Hotelling’s $T^2$ tests (one each for the ethnic majority and ethnic minority target group students). The results indicated no statistically significant difference between the male and female student populations with $T^2 = .91, df = 5, 290; p = .48$ for the ethnic majority, and $T^2 = .78, df = 5, 290; p = .57$ for the ethnic minority target groups respectively. In contrast, previous research suggests that boys are more likely than girls to be punished for a range of misbehaviors, which is argued to be related to the higher prevalence rates of externalizing behaviors amongst boys (Skiba et al., 2002). Our vignettes, however, were not representative of major problematic situations such as bullying or sexual offense, which might account for the inconsistent findings.} that were higher than .3, which suggests a factor structure. We therefore conducted an exploratory factor analysis (for the tables and a detailed description, see supplementary materials) for the Teacher Intervention Strategies, separately for ethnic majority and ethnic minority target groups.

The same two factors were extracted for both target groups, using principal component analysis (PCA), explaining 59.5% and 60% of variance for ethnic majority and ethnic minority target groups respectively. Intervention Strategies that loaded on the first factor (i.e., ‘warn’, ‘expel’, ‘contact parents’) suggested intervention strategies that are mostly dismissive in nature, whereas the second factor (i.e., ‘do nothing’, ‘discuss’) suggests a more tolerant, and understanding approach. We therefore created 4 new variables, ‘Dismissive Intervention Strategies’ and ‘Tolerant Intervention Strategies’ to both ethnic majority and ethnic minority students on the basis of this factor analysis.

**Multicultural Attitudes, Emotional Intelligence, and Demographics**

We inspected the correlations between Teachers’ Multicultural Attitudes, Emotional Intelligence measures, Background Characteristics, and Teachers’ Dismissive and Tolerant Intervention frequencies (for the descriptive statistics of these variables see Table 2).

Teachers’ Ethnic Background and Sex were not included in order not to confound our results by the highly uneven number of ethnic majority and ethnic minority, and male and female teachers included in this study. In addition, because the Ethnic Minority Percentage in teachers’ School was very strongly correlated with the Ethnic Minority Percentage in their Classroom ($r = .93, p < .01$), we only included the Classroom Percentage as a possible covariate (referred to as ‘Classroom Ethnic Composition’).

Table 3 shows correlations between all variables. Only Teachers’ Multicultural Attitudes (TMAS scores) significantly correlated with Teachers’ Tolerant Intervention Strategies for both ethnic majority and ethnic minority target group students. We further found significant correlations between Teachers’ Multicultural Attitudes and Self-report Emotional Intelligence test, between Multicultural Attitudes and Classroom Ethnic Composition, between Self-report Emotional Intelligence and Classroom Ethnic Composition, and between Age and Classroom Ethnic Composition. In addition, there was a significant negative correlation
between Self-report and Performance-based Emotional Intelligence scores. This echoes previous findings on the discrepancy between self-perceptions and actual performance (e.g., Fischer & Manstead, 2008; Murphy & Hall, 2011) emphasizing the importance of accompanying self-report measures with more objective ones.

**Table 2**

<table>
<thead>
<tr>
<th>Variable Description</th>
<th>N</th>
<th>Range</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
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<td>2. Performance-based Emotional Intelligence</td>
<td>148</td>
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<td>89</td>
<td>63.30</td>
<td>9.41</td>
<td>88.59</td>
</tr>
<tr>
<td>3. Multicultural Attitudes</td>
<td>148</td>
<td>64</td>
<td>32</td>
<td>96</td>
<td>72.90</td>
<td>8.95</td>
<td>80.09</td>
</tr>
<tr>
<td>4. Classroom Ethnic Composition (%)</td>
<td>148</td>
<td>100</td>
<td>0</td>
<td>100</td>
<td>25.66</td>
<td>29.46</td>
<td>867.60</td>
</tr>
<tr>
<td>5. Age</td>
<td>148</td>
<td>45</td>
<td>23</td>
<td>68</td>
<td>42.50</td>
<td>11.19</td>
<td>125.19</td>
</tr>
<tr>
<td>6. Years of Teaching Experience</td>
<td>145</td>
<td>40</td>
<td>1</td>
<td>41</td>
<td>17.32</td>
<td>10.38</td>
<td>107.79</td>
</tr>
<tr>
<td>7. Dismissive Intervention Frequency to Ethnic Majority</td>
<td>148</td>
<td>4.93</td>
<td>-2.41</td>
<td>2.52</td>
<td>.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>8. Tolerant Intervention Frequency to Ethnic Majority</td>
<td>148</td>
<td>5.62</td>
<td>-3.52</td>
<td>2.11</td>
<td>.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>9. Dismissive Intervention Frequency to Ethnic Minority</td>
<td>148</td>
<td>5.61</td>
<td>-2.32</td>
<td>3.29</td>
<td>.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>10. Tolerant Intervention Frequency to Ethnic Minority</td>
<td>148</td>
<td>6.57</td>
<td>-4.52</td>
<td>2.05</td>
<td>.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>145</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes. “Min” is the minimum, “Max” is the maximum, “SD” is the standard deviation, and “Var” is the variance values of the variables. The variables 7-10 are the components extracted after the Principal Component Analysis, which results in standardized values.

**Within-Subjects Multivariate Analysis of Variance**

Before testing whether Teachers’ Multicultural Attitudes and its interaction with their Emotional Intelligence would account for any differences between Teachers’ Intervention Strategies towards ethnic majority versus minority students’ misbehaviors, we first inspected whether teachers actually differed in their Intervention Strategies to these different groups of students. To this end, teachers’ mean intervention frequencies were submitted to a 2 (Type of Teacher Intervention: dismissive vs. tolerant) x 2 (Students’ Ethnic Background: ethnic majority vs. ethnic minority) within-subjects multivariate analysis of variance.
### Table 3

**Correlation Coefficients (Significance Levels) between Possible Covariates and Teacher Intervention Strategies**

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Self-report Emotional Intelligence</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Performance-based Emotion Recognition</td>
<td>-.18’ (.029)</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Multicultural Attitudes</td>
<td>.22’’ (.007)</td>
<td>.03 (.765)</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Classroom Ethnic Composition</td>
<td>.19’ (.022)</td>
<td>-.06 (.503)</td>
<td>.16’ (.049)</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Age</td>
<td>-.00 (.992)</td>
<td>-.07 (.386)</td>
<td>-.11 (.208)</td>
<td>-.20’ (.016)</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Years of Teaching Experience</td>
<td>-.04 (.634)</td>
<td>.03 (.765)</td>
<td>-.10 (.239)</td>
<td>-.14 (.096)</td>
<td>.82’’ (.000)</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Dismissive Intervention Frequency to Ethnic Majority</td>
<td>-.01 (.889)</td>
<td>.13 (.133)</td>
<td>-.05 (.591)</td>
<td>-.15 (.078)</td>
<td>-.13 (.119)</td>
<td>-.11 (.182)</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Tolerant Intervention Frequency to Ethnic Majority</td>
<td>.04 (.618)</td>
<td>.04 (.615)</td>
<td>.20’ (.019)</td>
<td>-.04 (.693)</td>
<td>.03 (.778)</td>
<td>.03 (.747)</td>
<td>.00 (1.00)</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Dismissive Intervention Frequency to Ethnic Minority</td>
<td>.07 (.416)</td>
<td>.11 (.20)</td>
<td>-.07 (.399)</td>
<td>-.02 (.801)</td>
<td>-.04 (.634)</td>
<td>-.07 (.391)</td>
<td>.84’’ (.000)</td>
<td>-.23’ (.006)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>10. Tolerant Intervention Frequency to Ethnic Minority</td>
<td>.01 (.956)</td>
<td>.06 (.464)</td>
<td>.18’ (.031)</td>
<td>-.02 (.834)</td>
<td>-.01 (.971)</td>
<td>.01 (.924)</td>
<td>.19’ (.020)</td>
<td>.80’’ (.000)</td>
<td>.00 (1.00)</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note.* ‘ *p < .05, ’’ *p < .01.*
Teacher Interventions to Student Misbehaviors

We did not find any differences in frequencies of teachers' Dismissive and Tolerant Intervention Strategies depending on Students' Ethnic Background, with an omnibus test result of $F(2, 146) = .00, p > .05, \eta^2_p = .00^{17}$. In fact, teachers' mean Intervention frequencies were almost identical for the two groups (see supplementary materials for the descriptive statistics). We therefore did not further investigate whether Teachers' Multicultural Attitudes and its interaction with their Emotional Intelligence would account for any differences between Teacher Intervention Strategies towards ethnic majority versus minority students' misbehaviors.

**Exploratory Analysis**

As we did not observe any effect of Students' Ethnic background, we averaged Teachers' Intervention frequencies across ethnic majority and ethnic minority target groups for both Intervention Types (dismissive and tolerant). Next, we examined whether Multicultural Attitudes predicted Tolerant Intervention frequencies in order to follow-up on their identified significant correlation. As such, we separately regressed Dismissive and Tolerant Teachers' Intervention types against Multicultural Attitudes.

Expectedly, Multicultural Attitudes did not significantly predict Teachers' Dismissive Intervention Strategies. Multicultural Attitudes, however, did significantly predict Teachers' Tolerant Intervention Strategies, $b = .02, t(146) = 2.41, p = .017$, and explained a significant proportion of variance in Teachers' Tolerant Intervention Strategies, $R^2 = .20, F(1, 146) = 5.80, p = .017$. With increasing positive Multicultural Attitudes, Tolerant Teacher Intervention frequencies also increase. For Dismissive Intervention frequencies, no such effect was found (see Table 4 for the regression results and Figure 1 for regression plots).

**Table 4**

*Regression Results of Teacher Intervention Frequencies against Teacher Multicultural Attitudes*

<table>
<thead>
<tr>
<th>Type of Intervention Frequency</th>
<th>$B$</th>
<th>$SE$</th>
<th>$\beta$</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dismissive Intervention Frequency</td>
<td>-.01</td>
<td>.01</td>
<td>-.06</td>
<td>-.73</td>
<td>.471</td>
</tr>
<tr>
<td>Tolerant Intervention Frequency</td>
<td>.02</td>
<td>.01</td>
<td>.20</td>
<td>2.41</td>
<td>.017$^*$</td>
</tr>
</tbody>
</table>

Note. *$p < .05$, **$p < .01$. $B$ is unstandardized and $\beta$ is standardized regression coefficient.*

---

17 We reached similar results when we investigated possible differences for all five teacher intervention strategies (do nothing, warn discuss, expel, contact parents), $F(5, 143) = .88, p > .05, \eta^2_p = .03$. 
Figure 1
Regression Plot of Teachers’ a) Dismissive, and b) Tolerant Intervention Frequencies Against Their Multicultural Attitudes

The aim of this study was to investigate whether and how teachers’ self-reported intervention strategies towards problematic behavior of ethnic majority versus ethnic minority students differed, and how teachers’ multicultural attitudes and emotional intelligence relate to these intervention strategies.

Our prediction that teachers would differ in their reported intervention strategies towards misbehaviors of students with and without a migration background was not supported. As we did not find any differences in teachers’ intervention strategies, we could not test our second and third hypotheses that multicultural attitudes and emotional intelligence would predict the size of the differences.

Previous research has often shown more negative intervention strategies for ethnic minority students. However, most of this research focused on secondary education in the US (with the exception of Petras et al., 2011; Rocque & Paternoster, 2011) or had pre-service teachers as participants (with the exception of Glock, 2016), which may account for the difference between our results and the majority of the previous research findings.
Another explanation for the absence of any differences in teachers’ interventions based on students’ ethnic backgrounds could be the prevalence of a tolerant and colorblind approach to diversity in Dutch schools (Weiner, 2016). While Dutch studies previously recorded prejudiced attitudes towards ethnic minorities (e.g., Van Den Bergh et al., 2010), other research suggests that teachers may try to prevent their biases from playing out due to having egalitarian self-concepts or because they want to avoid societal disapproval of discriminatory behavior (Park et al., 2008). In line with the latter, teachers in our sample scored rather high on the survey measuring teachers’ explicit multicultural attitudes and awareness. This may signal that they have egalitarian self-concepts, and/or they might have been relatively aware of the possibility that their own biases and frames of reference can lead to misinterpretations or misjudgments (Ponterotto et al., 1998).

Yet, discrimination is mostly perceived as disproportionate use of negative intervention strategies whereas more frequent use of positive intervention strategies with certain groups of students tend to receive less attention in research and this might be the case for teachers as well. It has been previously reported that ethnic majority students not only receive less punishment but also receive more positive interventions (e.g., Ferguson, 2001). In these cases, teachers might engage in less self-regulation. Therefore, including a wider range of possible teacher intervention strategies such as praising accomplishments (positive intervention) or exclusionary disciplinary actions (more extreme negative intervention strategies similar to that in the previous studies) might yield different results.

Additionally, our results indicated that, in general, teachers engaged more frequently in tolerant intervention strategies compared to dismissive intervention strategies. This is promising as amongst the tolerant intervention strategies, discussing the misbehavior with the students was the most frequently applied. Previous research suggests that teachers can only effectively prevent a misbehavior from happening if students understand why a behavior was problematic and what the expected consequences of the misbehavior are (De Jong, 2005).

A notable finding in the current study was that teachers who hold more positive multicultural attitudes showed less dismissive and more tolerant intervention strategies. Only the latter relationship was significant. This finding might signal that teachers who are more aware of and are comfortable with ethnic and cultural diversity are, in general, more understanding of individual differences between their students and their behaviors. The significant relationship that we found between teachers’ multicultural attitudes and their emotional intelligence might further suggest that both constructs tap an underlying factor that increases teachers’ interpersonal understanding, such as perspective taking abilities.

Finally, our results showed that teachers who had more positive multicultural attitudes and higher emotional intelligence were appointed in classrooms with higher ethnic minority concentration. This could be due to teachers’ active choices to go to schools/classrooms with higher minority concentrations (Ponterotto & Pedersen, 1993). They might be also
more likely to stay as they can better navigate with diversity than their colleagues (Thijs & Verkuyten, 2014). Alternatively, they might develop more positive attitudes due to increased exposure to a diverse student body (Allport, 1954; Pettigrew & Tropp, 2006). Consistent with the last account, we also found a significant positive relationship between ethnic minority concentration of the classrooms and teachers’ age, which was in return strongly related to their years of teaching experience.

**Limitations**

Several limitations constrain the interpretation of our study’s findings. To start with, we recognize the limitations of relying on self-reported data, which might have led to socially desirable answers. However, notwithstanding the benefits of having trained observers collect data in a more natural environment, this approach would only provide us with a much more limited sample, and only a fraction of their usual practice.

In addition, we used a performance-based emotional intelligence test to complement the self-report emotional intelligence measure. However, the performance-based measure was rather limited in its scope compared to the self-report, as it focused only on emotion perception. This may be accompanied in future research by a measure that would inform us also on how teachers would respond to the emotions they perceived.

Next, we had to take out the Implicit Association Task (IAT; Greenwald et al., 1998) from our initial design due to high drop-out rates as teachers were reluctant to complete the task. We do acknowledge, however, that the implicit attitudes might have predicted the size of any difference in teacher behaviors over and above explicit attitudes (van den Bergh et al., 2010). One solution could be to conduct a similar study with participants from schools that already have collaboration with research institutions. Teachers might be more motivated to complete tasks under those circumstances.

Lastly, we advise caution when generalizing our results to other samples and settings. Our sample was primarily comprised of relatively middle-aged, female teachers with no migration background. Hence, future investigators could benefit from relying on a more heterogeneous sample.

Our results prevent us from making strong claims about educational benefits of our findings. Nevertheless, we observed that positive multicultural attitudes can be important for all students. Teacher education programs can benefit from increasing information about social biases and knowledge about different groups in society, which has been previously shown to be useful in increasing understanding of differences and reduce prejudices (e.g., Dovidio et al., 2004).

**Directions for Future Research**

Despite the potential limitations, the current study supplements the literature on classroom management in diverse settings, role of emotions in education, and...
multiculturalism that has been primarily focused on the US educational context. Future research can overcome these limitations and look further into the relationship between multicultural attitudes and emotional intelligence and investigate whether there might be any interpersonal skills that underlie both teacher characteristics.

Next, differences in teacher behaviors would lead to differing educational outcomes to the extent that the difference is perceived as such by the students themselves (Suarez-Balcazar et al., 2003). Hence, another next step could be to include both teachers and students as informants in the investigation of teacher intervention strategies and examine them in relation to student outcomes such as school engagement and academic achievement.

Lastly, we encourage further research that includes not only problematic but a broader range of situations in vignette scenarios. Moreover, future research can provide both dismissive as well as rewarding intervention strategies as potential expressions of any difference in teacher interventions based on their students’ ethnic backgrounds. Differences in rewarding behavior may be a subtler form of differentiation between ethnic majority and minority group students. Providing a broader range of possible intervention strategies might not only better conceal the aim of the study and lead to less social desirability, but also reduce defensiveness in participants.

**Conclusion**

In conclusion, the current study addressed the need to better understand teachers’ classroom management within multicultural European classrooms. Our findings signal that teachers’ intervention strategies did not differ based on students’ ethnic backgrounds, and multicultural attitudes in education can potentially benefit all students regardless of their backgrounds.
Culturally responsive teaching has been associated with increased student engagement and achievement. Its practice in classrooms, however, has been shown to be less than optimal. Nonetheless, certain teacher qualities have been suggested to facilitate its practice. The current study sought quantitative evidence in support of two of these teacher qualities, namely teachers’ multicultural attitudes, and their perspective taking abilities. By identifying the strength of the suggested relationships, we aimed to examine the generalizability of previous findings in the literature and inform teachers’ professional development and interventions. 143 primary school teachers from different parts of the Netherlands responded to our online survey. We conducted a multivariate multiple regression analysis to investigate the relationship between these qualities and teachers’ engagement in two separate but related components of culturally responsive teaching (i.e., socially sensitive and culturally sensitive teaching). Results of our analysis yielded significant relationships between the two teacher qualities and the frequency with which teachers engage in socially and culturally sensitive teaching. Perspective taking was a stronger predictor for both aspects of culturally responsive teaching. These findings signal the significance of incorporating especially perspective taking experiences and exercises into teacher education and professional development programs, which could benefit all students regardless of their backgrounds. Our results are promising as these qualities are malleable and thus can be improved.

This chapter is based on:

CHAPTER 6

Teachers’ Multicultural Attitudes and Perspective Taking Abilities as Factors in Culturally Responsive Teaching
The debate around diversity currently is a salient and permanent aspect of educational discourse, as learning and teaching in multicultural classrooms have brought major challenges to both teachers and students. The educational position of students with a migration history still continues to be disadvantaged compared to their peers with no history of migration (OCDE, 2016). These findings suggest that more attention should be paid to factors that may support students’ educational success (Phalet et al., 2004).

In general, students feel valued, more capable of learning, and more engaged with the learning environment and materials when the teacher is responsive to their needs (e.g., Gay, 2010; Nieto, 2004). Culturally responsive teaching (CRT), defined by Gay (2010, p.31) as “using the cultural knowledge, prior experiences, frames of reference, and performance styles of ethnically diverse students to make learning encounters more relevant to and effective for them”, has been particularly associated with increased engagement and interest in school, and increased educational achievement of minoritized students (Aronson & Laughter, 2016). While there is a plethora of research on how to improve CRT, its practice in the classrooms has been shown to be less than optimal (Lim et al., 2019). One explanation for this problem could be that certain teacher qualities are necessary for effective CRT (Gay, 2013).

The current study aims to contribute quantitative evidence to the existing literature by examining teacher qualities that have previously been suggested to be essential for CRT (reviewed in Rychly & Graves, 2012). More specifically, we investigate teachers’ perspective taking abilities and their multicultural attitudes in relation to their self-reported CRT. To the best of our knowledge, the current study is the first to examine these connections quantitatively. With this quantitative evidence, we can examine the generalizability of previous findings in the literature, using a larger sample and more robust data. Additionally, by examining the strength of the suggested relationships, we hope to gain more insight in teachers’ professional development and most effective interventions.

**Culturally Responsive Teaching**

The unfavorable educational position of ethnically minoritized students has been attributed to a mismatch between home and school cultures (Phalet et al., 2004). Advocates of CRT have therefore argued that academic knowledge and skills should be connected to students’ personal experiences and frames of reference within a supportive and cooperative environment. This way, learning becomes more meaningful and engaging (Gay, 2000, 2002). Indeed, different aspects of CRT have been found to be related to positive student outcomes, such as increased student engagement, better achievement, and more positive peer relationships.

As detailed by Gay (2002), CRT includes developing a culturally diverse knowledge base by learning about differences in communication and learning styles, and attending to unique cultural qualities of the students and their realities (e.g., racism and discrimination). In order to build this knowledge base, teachers need to learn about the various elements
Factors in Culturally Responsive Teaching

of students’ culture—ranging from tangible culture or family experiences, artifacts, and events to intangible culture such as values, traditions, language, and identity—through their own research and meaningful relationships with students (Morrison et al., 2008). This can be accomplished by, for instance, making home visits at the beginning of the school year, giving opportunities to students to share personal experiences via classroom discussions, or asking students to write stories about their lives (Morrison et al., 2008). This would help teachers to identify the ways in which mainstream schooling and culture may differ from the home culture of certain students, and how their culture and language may contribute to their attitudes and behaviors. Turkish society, for instance, is characterized by generational hierarchy. Accordingly, children’s relationships with authority figures such as their fathers and their teachers are, to a great extent, marked by conformity, whereas taking initiative and posing questions are discouraged (Sunar & Fişek, 2005).

CRT also implies designing culturally relevant curricula and culturally responsive instructions to make learning more relevant and effective (Gay, 2002). Relating learning materials to students’ personal lives can vary from simply posting a song that shows acknowledgment of their students’ backgrounds (Landsman, 2006) to a more thorough examination of the teaching material in order to ensure that it does not only reflect the mainstream perspectives. Feger (2006), for instance, showed that her students, who were predominantly migrants from the Caribbean and Central and South America, were more engaged in reading, more critical about the reading material, and were able to identify more with the selected texts when she included literature that offered characters and problems similar to her students’ lives. Dimick (2012) also showed that when students in an environmental science class were included in a shared decision-making process to create school projects relevant to their community, they felt not only academically but also socially and politically empowered.

Lastly, CRT comprises demonstrations of cultural caring, building a learning community, and effective cross-cultural communication (Gay, 2002). In addition to the challenges of addressing diversity issues within the curriculum, the need to address social competence has been increasing, as this is crucial for student engagement (see e.g., Self Determination Theory; Deci & Ryan, 1985). Team-building activities, for example, promote social cohesion and a sense of solidarity. Creating an inclusive social-emotional climate helps students to feel more at ease when they express personal opinions and experiences (Cuseo, 2000). Moreover, Harriott and Martin (2016) reported that cooperative learning opportunities among students who differ in their cultural heritage and achievement levels promote friendship formation, prosocial interactions, acceptance of differences between peers, and support for others’ learning. These opportunities thus may help students from various groups to familiarize with each other, facilitate exchange of cultural information, learn to value diversity, and use the cultural resources of their peers in creative problem-solving (Johnson & Johnson, 2000).
In sum, various CRT practices may lead to more critical and active learning and better school engagement (see Morrison, Robbins, and Rose’s synthesis of research on what CRT “looks like” in classrooms; 2008).

Teacher Qualities Essential for CRT

The aforementioned relationships between different aspects of CRT and positive student outcomes suggest that the educational position of minoritized students could be improved with teachers’ attention to the variability in their students’ experiences and needs. However, notwithstanding the expanding literature on these positive outcomes and the availability of practical information on how to improve educational and pedagogical practices, CRT have been criticized to be either not implemented at all (Kim & Pulido, 2015; Gloria Ladson-Billings, 2014) or implemented at a rather superficial level, such as through celebration of ethnic foods (Sleeter & McLaren, 2009). This suggest that many teachers could further improve their capacities to adapt their teaching to the needs of a diverse student body. With the current research, we will examine whether specific teacher qualities are related to the frequency with which teachers engage in the more meaningful aspects of CRT.

In their review, Rychly and Graves (2012) identified three teacher qualities that are especially important for CRT. First, teachers should be able to take their students’ perspectives. This involves replacing one’s own frame of reference by the other’s perspective, and understanding where their students come from and where they stand when preparing their educational environment, forming and/or implementing the curriculum and the instructional material (Cooper, 2004; McAllister & Irvine, 2002; Robins et al., 2006). Secondly, teachers should develop positive attitudes and beliefs about other cultures, as well as be aware of their own cultural frames of reference (Grant & Asimeng-Boahene, 2006; Nieto, 2004). Lastly, teachers should have knowledge about cultures that are represented in their classrooms to be able to adjust their teaching accordingly (Rychly & Graves, 2012). In the current study, we test the first two proposed relationships by examining whether teachers’ perspective taking abilities and multicultural attitudes are associated with the frequency with which they engage in CRT.

Perspective taking – the ability to perceive things from a point of view other than one’s own (Moskowitz, 2005, p. 277), has been proposed to be a desirable trait for teachers in multicultural settings. It has been previously associated with appreciation and respect for individuals’ unique experiences, and with flexibility, reduced stereotyping (Galinsky & Moskowitz, 2000), and sensitivity to different cultures (Germain, 1998). Teachers who can take the perspectives of their students are able to better understand their students’ different needs and adapt their instruction and curricula to match these needs (Darling-Hammond, 2000; McAllister & Irvine, 2002). Further, these teachers are expected to be more successful in providing unbiased education (Rychly & Graves, 2012). We therefore hypothesized that
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(H1) teachers who have higher perspective taking abilities will more frequently engage in culturally responsive teaching.

In addition to being able to take others’ perspectives, teachers’ own attitudes and beliefs are suggested to be important for CRT as well. Especially implicit stereotypes and negative attitudes can influence student judgments and contribute to unfavorable educational outcomes of minoritized students (Tobisch & Dresel, 2017). Teachers’ decisions on selecting students for various academic tracks, for instance, have been found to be affected by stereotypical achievement expectations that are activated by as little information as a prototypical name (Tobisch & Dresel, 2017). Teachers cannot effectively engage in CRT, unless they hold positive attitudes towards diversity and are aware of their own, sometimes biased, attitudes and beliefs about other cultures (Nieto, 2004). We use the umbrella term ‘multicultural attitudes’ to reflect “teachers’ awareness of, comfort with, and sensitivity to issues of cultural pluralism”, following the definition of Ponterotto, Baluch, Greig, and Rivera, (1998, p. 1003). Teachers with more positive multicultural attitudes consider cultural diversity as an asset and feel more compelled to address issues around diversity in their teaching (Ponterotto et al., 1998). We therefore hypothesized that (H2) teachers who have more positive multicultural attitudes will engage in culturally responsive teaching more frequently.

The Current Study

We tested whether the extent of teachers’ culturally responsive teaching practices is associated with (1) teachers’ perspective taking abilities and (2) teachers’ multicultural attitudes. Our target group was primary school teachers. Primary school years are very important in students’ developmental trajectories with long-term consequences in their academic and social development (Swanson, Cunningham, Youngblood, & Spencer, 2009). In addition, we asked teachers to report on their own ethnic background as well as the concentration of ethnically minoritized students in their classroom, since teachers in these classrooms might be more aware of issues around diversity (Edwards, 2016) and thus might engage more in CRT (Thijs & Verkuyten, 2014). Previous studies have shown that the urgency to give attention to diversity matters is more apparent in schools with higher concentrations of ethnically minorititized children, whereas in schools with fewer ethnically minorititized children, discussing such matters is perceived as less relevant and thus harder to achieve (Agirdag et al., 2016). Moreover, with increased exposure to a diverse student body, teachers may develop more positive attitudes and more awareness about diversity (Allport, 1954). Accordingly, beginning teachers, for instance, may find navigating diversity more challenging. We therefore also included teachers’ age and years of teaching experience in our study (van Tartwijk et al., 2009).
Method

Participants

Hundred and forty-three primary school teachers from cities in all regions of the Netherlands responded to an online advertisement targeting our specific sample. Participants received €10 for their participation. One person was excluded on the basis of not attending to the questionnaire (all questions had the same ratings), and eight participants were excluded for not meeting our selection criteria. Moreover, one participant was excluded due to her scores that were multivariate outliers. 86.9% of the remaining sample ($M_{age} = 38.93, SD_{age} = 11.71$, 84.7% female) indicated Dutch as their first ethnic affiliation, 19.7% of which also identified with a second ethnic background. 13.1% of the sample did not specify their ethnic backgrounds. The participants were predominantly female and white, as also found in previously published studies conducted in the Netherlands (e.g., Abacioglu et al., 2019; Van Den Bergh, Denessen, Hornstra, Voeten, & Holland, 2010). Our sample demographics mirror the teaching force in the Netherlands, which has been increasing in diversity, but is still fairly homogenous.

Procedure and Design

All the questionnaires were administered in Dutch. In order to ensure correct translations, the English questionnaires were translated from and back translated to English (except for the Interpersonal Reactivity Index for which we used an existing translation in Dutch, see the materials section). Moreover, items were reviewed by a team of seven individuals comprising teacher educators, in-service teachers, and educational scientists for the appropriateness of the items for the Dutch educational context.

For participant recruitment, we used Facebook’s advertising opportunities to target teachers with the desired background (i.e., primary school in-service teachers in Dutch schools). The advertisement included minimal information, indicating that we are recruiting for a study on cultural diversity. The study’s duration and the amount of monetary compensation was included in the description.

Ethical approval for this study (2017CDE7604) was granted by the Ethics Review Board of the Faculty of Social and Behavioral Sciences, University of Amsterdam, the Netherlands. The participating teachers filled in an online survey on Qualtrics that lasted about 15 minutes to complete. Participation was voluntary and anonymous as the survey ended immediately if the participant did not give consent at the beginning of the survey.

Measures

Culturally Responsive Teaching Practices

Teachers responded to 40 statements on a 5-point Likert-type scale, about their practices in student assessment, curriculum and instruction, classroom management,
Factors in Culturally Responsive Teaching

and cultural enrichment. The items were based on the Culturally Responsive Teaching Self-efficacy Scale (CRTSES; Siwatu, 2007), but have been adapted to measure practices in the classrooms. An example item from the survey is “I identify the diverse needs of my students” (responses on a scale from 1: never to 5: always).

Some items were excluded from our analyses because of the following reasons: they were not representative of the Dutch educational context, they were too subject specific (e.g., “I talk about the achievements of culturally different others in Math”), they were about the home life of the students, or they were too similar to other items.

Conceptually, we retained items that fell under two categories: items that were representative of teachers’ cultural responsiveness (e.g., “I use the cultural background of my students to make learning meaningful”), and an overall responsiveness to students’ academic (e.g., academic strengths and weaknesses of students) and social needs (e.g., positive relationships with classmates). In order to test this categorization, we performed a factor analysis with 2 forced factors as detailed in the Data Analysis section. Examining the factor structure of these items indicated a good fit for a 2-factor solution of the data. Throughout the text, these categories are referred to as ‘culturally sensitive teaching’ ($\alpha = .83$) and ‘socially sensitive teaching’ respectively ($\alpha = .73$). Sum scores were calculated per category (see the Appendix for the retained items and their factor loadings).

**Perspective Taking**

Teachers’ self-reported perspective taking abilities were measured using the perspective taking subscale of the Dutch version of the Interpersonal Reactivity Index (De Corte et al., 2007), originally developed by Davis (1983). Participants responded to 7 items on a 5-point Likert scale (1: does not describe me well, 5: describes me very well), asking them to report how likely they are to try seeing things from another person’s point of view. An example item from the survey is “I sometimes try to understand my friends better by imagining how things look from their perspective”. Sum scores were calculated per participant. Higher scores indicate stronger perspective taking abilities ($\alpha = .72$).

**Teacher Multicultural Attitudes**

Teachers’ cultural awareness and sensitivity were assessed with the Teacher Multicultural Attitudes Survey (TMAS; Ponterotto et al., 1998). Teachers responded to 20 statements on a 5-point Likert scale (1: strongly disagree, 5: strongly agree). An example item from the survey is “Teachers have the responsibility to be aware of their students’ cultural backgrounds”. TMAS has shown low social desirability and is unique in its focus on the educational context. It has yielded convergent correlations with scales measuring individuals’ subtle racial and gender bias (e.g., the Quick Discrimination Index; Ponterotto et al., 1995) and attitudes towards and interactions with outgroup members (e.g., the Multigroup Ethnic Identity Measure, Other Group Orientation subscale; Phinney, 1992), supporting its
construct validity with $r = .45$ and $r = .31$ respectively (Ponterotto et al., 1998). Sum scores were calculated per participant. Higher scores indicate more positive attitudes and higher awareness. Reliability for the measure was $\alpha = .77$.

**Data Analysis**

Analyzing patterns of missing values indicated that more than 5% of the values were missing completely at random (MCAR) with $\chi^2 (1220) = 1267.158, p = .170$. Missing data were handled using pairwise deletions, as this method produces consistent and hence relatively unbiased estimates of the parameters when the data are MCAR (Allison, 2009). Checking the Mahalanobis distance using both sum scores and subscale scores from our measures indicated one multivariate outlier in our data ($df = 8, \alpha = .05$), which was excluded from our sample.

To confirm the factor structure of the items we retained from the Culturally Responsive Teaching Practices measure (based on Siwatu, 2007), we performed a factor analysis using the remaining sample. The value of Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) was .78, indicating that the strength of the relationships among items was high; and, the Bartlett’s Test of Sphericity was significant ($\chi^2 (190) = 644.521, p < 0.001$). The data hence met the assumptions of factor analysis.

The factor analyses were performed using the Maximum Likelihood extraction method. An Oblimin rotation was used as factors were expected to be correlated. We first discovered the factor structure with an exploratory factor analysis ($\chi^2 (100) = 100.774, p = .459$); and, also examined a 3-factor solution ($\chi^2 (133) = 166.962, p = .025$). However, in line with our conceptual categorization, the 2-factor solution fit our data the best ($\chi^2 (151) = 217.508, p < 0.001$). The first factor had an eigenvalue of 5.338 and accounted for 26.7% of the variance in the data. Factor two had an eigenvalue of 2.106 and accounted for further 10.6% of the variance (see Appendix for the factor loadings).

In addition, we investigated whether there were any differences between groups of teachers with different ethnic identities regarding the main variables in our study. A one-way MANOVA was performed with teachers’ self-identified ethnic background (only Dutch, Dutch and another, only another) as the grouping variable, and their perspective taking, multicultural attitudes, and culturally responsive teaching as the variables to be compared. We did not find a significant difference on these variables based on ethnic background, $F (8, 204) = .611, p = .606; \text{Wilks’ } \Lambda = 0.940, \text{partial } \eta^2 = .03$ (see Table 1). Subsequently, participants who indicated another affiliation than Dutch (e.g., Turkish) or an additional ethnic affiliation to Dutch (e.g., Moroccan-Dutch) were grouped together to form one minoritized ethnic group for easier interpretation of our analysis results.
Table 1

**MANOVA Results for Teachers Grouped by Their Ethnic Affiliation**

<table>
<thead>
<tr>
<th></th>
<th>SS</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>η^2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perspective taking</td>
<td>28.032</td>
<td>2</td>
<td>14.016</td>
<td>1.200</td>
<td>.305</td>
<td>.022</td>
</tr>
<tr>
<td>Multicultural attitudes</td>
<td>62.052</td>
<td>2</td>
<td>31.026</td>
<td>.580</td>
<td>.562</td>
<td>.011</td>
</tr>
<tr>
<td>CRT: Culturally sensitive teaching</td>
<td>17.285</td>
<td>2</td>
<td>8.643</td>
<td>.236</td>
<td>.790</td>
<td>.004</td>
</tr>
<tr>
<td>CRT: Socially sensitive teaching</td>
<td>11.048</td>
<td>2</td>
<td>5.524</td>
<td>.520</td>
<td>.596</td>
<td>.010</td>
</tr>
</tbody>
</table>

*Note. CRT = Culturally Responsive Teaching.*

As we considered two predictor variables in order to explain values of two dependent variables (i.e., the two components extracted from CRT: culturally sensitive teaching and socially sensitive teaching), we used multivariate multiple regression to analyze our data. This approach is equivalent to performing separate univariate regressions independently for each dependent variable. However, the current analytical approach does not assume that the responses are independent from each other and do account for the correlations between the dependent variables (Johnson & Wichern, 2015). Type 3 sums of squares method was used to estimate the effects of predictors on the dependent variables after controlling for all the other variables in the model.

**Results**

Table 2 presents descriptive statistics and zero-order correlations among the variables. Teachers’ Background Variables were not related to any of the outcome variables. The Concentration of Ethnically Minoritized Students in teachers’ classrooms, on the other hand, was related to teachers’ Attitudes, Perspective Taking Abilities, and their Culturally Sensitive Teaching. Teachers who reported more positive Multicultural Attitudes, higher Perspective Taking Abilities, and more frequent Culturally Responsive Teaching worked in schools that had higher Concentration of Minoritized Students.

In order to test our hypotheses that teachers’ Perspective Taking Abilities and Multicultural Attitudes are uniquely associated with Culturally Responsive Teaching Practices, we conducted a multivariate multiple regression analysis with Perspective Taking and Multicultural Attitudes as predictor variables, and their Culturally Sensitive Teaching and Socially Sensitive Teaching as the dependent variables, while we controlled for their classroom’s Ethnically Minoritized Student Concentration. The results of the analysis are presented in Figure 1.
Table 2
Descriptive Statistics and Zero-order Intercorrelations

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnic background</td>
<td>-</td>
<td>-</td>
<td>.048</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Years of teaching</td>
<td>14.50</td>
<td>10.50</td>
<td>-.008</td>
<td>.076</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minoritized student</td>
<td>33.35 (100)</td>
<td>31.53</td>
<td>-.086</td>
<td>-.145</td>
<td>.099</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>concentration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IRI: Perspective taking</td>
<td>24.77 (35)</td>
<td>3.75</td>
<td>.060</td>
<td>-.045</td>
<td>.201**</td>
<td>.284**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multicultural attitudes</td>
<td>71.73 (100)</td>
<td>7.39</td>
<td>-.065</td>
<td>.056</td>
<td>-.107</td>
<td>.289**</td>
<td>.235**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRT: Culturally sensitive</td>
<td>38.07 (55)</td>
<td>3.25</td>
<td>-.044</td>
<td>.064</td>
<td>.183</td>
<td>.345**</td>
<td>.329**</td>
<td>.429**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>teaching</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRT: Socially sensitive</td>
<td>38.37 (45)</td>
<td>6.01</td>
<td>-.009</td>
<td>.006</td>
<td>.087</td>
<td>.090</td>
<td>.243**</td>
<td>.227**</td>
<td>.425**</td>
<td>1</td>
</tr>
<tr>
<td>teaching</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. *p < .05, **p < .01. a. Years of teaching is presented in years, which was strongly correlated with teachers’ age (r = .92, p < .01). b. Minoritized student concentration in classrooms was strongly correlated with minoritized student concentration in schools (r = .88, p < .01). Hence, teachers’ age and their schools’ minoritized student concentration are not presented in this table. c. The highest possible scores are indicated in parenthesis.

Figure 1
The Multivariate Multiple Regression Model

Note. The regression coefficients are unstandardized (the measurement scale is the same for all variables). *p < .05. **p < .01. Model $R^2 = .28$. 
Factors in Culturally Responsive Teaching

Teachers’ more positive Multicultural Attitudes and higher Perspective Taking Abilities were significantly associated with engaging more in both the Culturally and Socially Sensitive aspects of Culturally Responsive Teaching. For both predictors, the relationship was stronger for the Culturally Sensitive compared to the Socially Sensitive Teaching component. Further, Perspective Taking, compared to Multicultural Attitudes, was a stronger predictor of both components.

Discussion

The current study investigated teachers’ perspective taking abilities and their multicultural attitudes in relation to their self-reported culturally responsive teaching practices. In doing so, we sought evidence in support of teacher qualities that have previously been suggested to be essential for (e.g., Cooper, 2004; Grant & Asimeng-Boahene, 2006; McAllister & Irvine, 2002; Nieto, 2000; Robins et al., 2006; for a review see Rychly & Graves, 2012).

Our findings supported both hypotheses. Teachers who had better perspective taking abilities and more positive multicultural attitudes, reported to engage in CRT more frequently. Expectedly, both multicultural attitudes as well as perspective taking abilities better predicted culturally sensitive compared to socially sensitive teaching. Culturally sensitive teaching seems to be associated with practices that require greater willingness, effort, and ability to understand individual differences that relate to cultural elements. Socially sensitive teaching on the other hand seems to tap individual differences between students that are not necessarily due to cultural elements. Teacher qualities related to taking another persons’ perspective and being aware of diversity of experiences may thus support teachers’ attempts to effectively navigate through these differences.

Another important finding was that perspective taking was a stronger predictor for both components of CRT than multicultural attitudes were. One explanation for this finding could be that when reporting on their perspective taking abilities, teachers reflected relatively more on distinct cognitive processes in comparison to their attitudes, awareness, and beliefs, which are harder to recognize.

Finally, our results showed that teachers who reported more positive multicultural attitudes and better perspective taking abilities were appointed in schools with a higher concentration of ethnically minoritized students. This can be explained in two ways. These teachers might have actively chosen to teach in or did not drop out of schools/classrooms with higher minoritized student concentrations, because they feel more comfortable with dealing with diversity than their colleagues (Thijs & Verkuyten, 2014). Alternatively, teaching in rather diverse environments may have resulted in more positive multicultural attitudes and a stronger motivation to take others’ perspectives in teachers, due to an increased exposure to a diverse student body (Allport, 1954). Regardless, the finding that these teachers engage
more frequently in the culturally and socially sensitive teaching aspects of CRT signals that perspective taking abilities and positive multicultural attitudes are both desirable teacher qualities for good teaching practices. Moreover, in line with previous research that showed that inducing perspective taking was effective in improving attitudes toward stigmatized groups such as the homeless (Batson et al., 1997) and ethnic and racial minoritized groups (Finlay & Stephan, 2000), our results also showed that teachers who had better perspective taking abilities reported to have more positive multicultural attitudes.

**Practical Importance**

Teachers’ perspective taking abilities and multicultural attitudes seem critical for negotiating the complexities of diversity in classrooms. These qualities enable teachers to better align their teaching to their students’ needs. Our findings are promising for these qualities are malleable and thus can be improved inasmuch as teachers build on top of their existing knowledge on their students’ values, beliefs, communities, personal lives, and experiences.

Along these lines, Warren (2018) recommended three specific professional learning experiences that could further teachers’ perspective taking abilities. First, the author recommended teachers to get exposed to texts written on and by culturally and linguistically diverse populations in order to better recognize, determine, and scrutinize examples of institutionalized oppression. Second, the author recommended teachers to participate in the social worlds and realities of individuals from cultural communities that differ from their own. Such experiences should induce changes in teachers’ awareness, attitudes, beliefs, and values about cultural differences. Third, the author postulated that these experiences must be accompanied by critical dialogue with colleagues on a regular basis. Introspection on emotional, behavioral, and cognitive reactions towards students and their families should form the basis of these dialogues.

Thus, similar to perspective taking abilities, meaningful direct contact with people from diverse backgrounds (Allport, 1954), and opportunities to reflect on how culture shapes our values, beliefs, biases, and behaviors have been shown to improve attitudes and awareness (Case, 2007). Therefore, teacher education experiences similar to that recommended by Warren (2018) can be included in teacher education and professional development programs. This would support teachers’ capacities to become more effective in teaching a diverse student body. Importantly, our results suggest that strengthening these capacities would not only improve the culturally sensitive teaching aspects of CRT but also teaching in a socially sensitive manner to student needs in general. As such, strengthening these capacities would benefit all students regardless of their backgrounds. These findings signal the significance of incorporating especially perspective taking experiences and exercises into teacher education and professional development programs.
Limitations and Directions for Future Research

This study also has some limitations. First, although teachers’ own experiences and self-knowledge are important sources of information, self-reports are also subject to social desirability and self-enhancing biases. The anonymity provided by online data collection, compared to other methods such as observations and interviews, helps mitigate this limitation. Yet, individuals may not be fully aware of their own biases, which may obstruct the accuracy of their self-reports (McDonald, 2008). Future research may therefore include information from multiple informants to test the accuracy of these self-report findings. For instance, the current study measured the willingness and tendency of teachers to take the perspective of others. Whether this is also reflected in their actual perspective taking in the classroom, however, was not investigated.

Second, our measures were quantitative in nature because we aimed to find quantitative support for results from previous mainly qualitative studies. Future studies could include multiple assessment methods, which could contribute to the methodological robustness in measuring complex constructs similar to the ones used in our study. We should note, however, that the measures we used (e.g., the IRI) have been validated in the past in numerous studies, and have also been shown to be predictive of behavioral measures (e.g., Bonfils et al., 2017; Gini et al., 2007; Hawk et al., 2013).

Third, the actual CRT practices of teachers were beyond the scope of this study. It is important that prospective studies investigate what CRT practices entail and how they differ for teachers with higher perspective taking abilities and more positive multicultural attitudes compared to their counterparts who are rather less skilled and whose attitudes are less positive.

Finally, our study focused on the Dutch educational system and therefore we excluded items from the original (English) CRT measure that did not apply to the Dutch context (see Siwatu, 2007). Similar to any study of school context, some caution is therefore warranted with generalizing the results of this study to other settings. Moreover, we cannot exclude the possibility that teachers who are more positive on diversity matters were more likely to respond to our social media advertisement for recruiting participants. However, it should be noted that this type of research is almost always subject to selection bias, regardless of the recruitment method (Forgasz et al., 2018). That being said, with the increasing use of social network sites for participant recruitment, research on the representativeness of such samples has also increased. A recent study (Zhang et al., 2018) compared results from separate surveys that included participants who were recruited using Facebook, who were independently recruited by a reputable survey research firm, and who were recruited by the American Community Survey, participation of which is required by law in the U.S. The authors’ analyses yielded identical outcomes for the surveys regardless of their recruitment method. We are therefore confident that our recruitment method did not compromise the representativeness of our sample and the generalizability of our results.
Despite the limitations, our research supplements the literature with important first insights in a field that is under-researched. Our results showed that positive attitudes and awareness about diversity, and perspective taking abilities are related to increases in cultural and social sensitivity in teaching. Hence, strengthening these capacities can improve the educational position of students with a migration history, as well as benefit their peers without any history of migration.
Appendix

Culturally Responsive Teaching Practices

Conceptually, from the Culturally Responsive Teaching Practices measure (based on Siwatu, 2007), we retained items that fell under two categories, namely 1) culturally sensitive teaching and 2) Socially sensitive teaching. In order to verify this categorization, we performed a factor analysis with 2 factors. The items and their factor loadings can be found in Table A1 below.

Table A1
Culturally Responsive Teaching: Item Selection and Reduction

<table>
<thead>
<tr>
<th>Retained Items</th>
<th>Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factor 1</strong></td>
<td><strong>Factor 2</strong></td>
</tr>
<tr>
<td>CRT_5 Identify aspects in which the school culture (for example, values, norms, and practices) differs from the home culture of my students.</td>
<td>.652</td>
</tr>
<tr>
<td>CRT_12 Establish community between students when my class exists of students from various backgrounds.</td>
<td>.505</td>
</tr>
<tr>
<td>CRT_13 Use the cultural background of my students to make learning meaningful.</td>
<td>.712</td>
</tr>
<tr>
<td>CRT_16 Obtain information regarding the cultural background of my students.</td>
<td>.592</td>
</tr>
<tr>
<td>CRT_19 Design a classroom environment with attributes that represent a variety of cultures.</td>
<td>.478</td>
</tr>
<tr>
<td>CRT_27 Revise educational materials to improve its’ representation of cultural groups.</td>
<td>.664</td>
</tr>
<tr>
<td>CRT_28 Critically study the curriculum in order to determining whether it does or does not strengthen negative cultural stereotypes.</td>
<td>.358</td>
</tr>
<tr>
<td>CRT_30 Design tasks in the classroom in a way that helps improve the understanding of students studying Dutch.</td>
<td>.521</td>
</tr>
<tr>
<td>CRT_31 Communicate with the parents of students studying Dutch about their child’s achievements.</td>
<td>.418</td>
</tr>
<tr>
<td>CRT_35 Make use of examples that are relatable for students from culturally different backgrounds.</td>
<td>.700</td>
</tr>
<tr>
<td>CRT_37 Obtain information concerning my students’ academic interests.</td>
<td>.298</td>
</tr>
<tr>
<td>CRT_38 Make use of my students’ interests to make learning meaningful to them.</td>
<td>.363</td>
</tr>
</tbody>
</table>
Table A1
Continued

<table>
<thead>
<tr>
<th>Loaded on Socially Sensitive Teaching Factor (Factor 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRT_1 Adjust instructions to cater to the needs of my students.</td>
</tr>
<tr>
<td>CRT_2 Obtain information regarding the academic strengths of my students.</td>
</tr>
<tr>
<td>CRT_3 Assess whether my students rather work alone or in a group.</td>
</tr>
<tr>
<td>CRT_7 Judge my students’ learning using various kinds of tests.</td>
</tr>
<tr>
<td>CRT_21 Obtain information regarding my students’ academic weaknesses.</td>
</tr>
<tr>
<td>CRT_26 Help students establish positive relationships with their classmates.</td>
</tr>
<tr>
<td>CRT_34 Use a learning preference survey to obtain information on how my students prefer to learn.</td>
</tr>
<tr>
<td>CRT_40 Develop education according to my students’ developmental needs.</td>
</tr>
</tbody>
</table>

Excluded Items

| CRT_4 | Assess whether my students are comfortable with competing with other students. | - | - |
| CRT_6 | Implement strategies to minimize the effects of the mismatch between my students’ home culture and the school culture. | - | - |
| CRT_6 | Implement strategies to minimize the effects of the mismatch between my students’ home culture and the school culture. | - | - |
| CRT_8 | Obtain information regarding the home life of my students. | - | - |
| CRT_9 | Establish a feeling of trust with my students. | - | - |
| CRT_10 | Establish positive relationships between home and school. | - | - |
| CRT_11 | Employ a variety of educational methods. | - | - |
| CRT_14 | Use my students’ common knowledge to help them understand new information. | - | - |
| CRT_15 | Identify how the way in which students communicate at home can differ from the school’s norms. | - | - |
| CRT_17 | Teach students about their cultures’ contributions to science. | - | - |
| CRT_18 | Greet students studying Dutch with a phrase from their mother tongue. | - | - |
| CRT_20 | Establish a personal relationship with my students. | - | - |
| CRT_22 | Praise students studying Dutch for their achievements, using a phrase in their mother tongue. | - | - |
| CRT_23 | Identify ways in which standardized tests can be prejudiced against linguistically different students. | - | - |
| CRT_24 | Communicate with parents regarding the progress of their child’s education. | - | - |
| CRT_25 | Structure parent-teacher conferences in a way in which this meeting is not intimidating to parents. | - | - |
| CRT_29 | Develop a lesson, which shows how other cultural groups have made use of mathematics. | - | - |
| CRT_33 | Identify ways in which standardized tests can be prejudiced against culturally different students. | - | - |
| CRT_36 | Explain new concepts using examples from my students’ daily lives. | - | - |
| CRT_39 | Implement cooperative learning activities for students who prefer to work in groups. | - | - |

*Note. CRT = Culturally Responsive Teaching. The second part of each item’s name represents the original item number within Culturally Responsive Teaching measure (same as in Siwatu, 2007).*
PART III

Would teachers benefit from professional learning on multicultural education and if so, how?
Students from most minority groups continue to differ from their majority group peers in their educational outcomes. Teachers are expected to have capacity to adequately respond to diversity; however, evidence for the effectiveness of professional learning in equipping teachers with the necessary skills is limited. Including data from 3,006 in-service primary and secondary public-school teachers in New South Wales, we investigated the effects of professional learning in multicultural education on teachers’ beliefs about the effectiveness of multicultural strategies in fostering a culturally inclusive environment, the importance of these strategies in providing equitable opportunities for students, and the teachers’ support for multicultural ideologies and practices. The results from our multilevel structural equation model showed that teachers who received professional learning in multicultural education had more positive attitudes and beliefs about multicultural ideologies and practices compared to teachers who did not undergo professional learning. These relationships were more salient for teachers who underwent professional learning during in-service years.

This chapter is based on:

Abacioglu, C. S., Fischer, A., & Volman, M. (under review). Professional learning in multicultural education: What can we learn from the Australian context?
CHAPTER 7

Professional Learning in Multicultural Education: What Can We Learn from the Australian Context?
The demographic profiles of classrooms in many parts of the world are becoming more diverse due to the high levels of forced and voluntary migration (Beutel & Tangen, 2018). This poses significant challenges to teachers worldwide. Signaled by the academic achievement gap between cultural, ethnic, and linguistic minority and majority students, high dropout rates and overrepresentation of minorities in lower academic tracks in most of the Western world, high rates of reported stigmatization and discrimination by minorities, and disproportionate use of disciplinary methods (mostly in the U.S.; Voltz, Brazil, & Scott, 2004), education systems and educators still need to make progress in fulfilling the demands of culturally diverse classrooms.

Teachers, however, cannot be expected to effectively accommodate diversity in their classrooms without being professionally prepared for it (Sleeter, 2001). Indeed, teachers continue to report a lack of professional confidence in responding to diversity, which is suggested to be a direct reflection of the lack of education for cultural diversity in teachers’ professional learning (le Roux & Moeller, 2002). The current study examined the extent to which investing in such professional learning opportunities could influence public school teachers’ approach to diversity and therefore potentially improve their performance in accommodating students from diverse backgrounds.

**Accommodating Diversity**

By and large, students from different cultural, ethnic, and linguistic minority groups still continue to differ in their educational outcomes (Parkhouse et al., 2019). In European countries such as Germany and the Netherlands, the educational achievements of students with migrant backgrounds from countries like Turkey and Morocco (Weiner, 2016); in the U.S, African-American, American Indian, and Latinx students (Gregory et al., 2010); in Australia, students with Middle Eastern and Aboriginal heritage lag behind those of their majority group peers (Noble & Watkins, 2014).

There are many possible explanations for this achievement gap, varying from the segregation of schools along ethnic or “racial” lines in Europe and the U.S., the socio-economic background of children form minority groups, and the resulting decreased access to educational resources, a mismatch between the home and school culture, as well as experiences of stereotyping, prejudice, and discrimination (Vervoort et al., 2010). These are all aspects of intergroup bias, in which members of other groups (mostly minority groups) are attributed generalized characteristics (stereotypes), are prone to be evaluated negatively (prejudice), or are the victim of negative actions (discrimination) (Dovidio et al., 2010).

One crucial element in both increasing and decreasing differences in achievement in different groups are the teachers. They are not only responsible for learning materials

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18 With the exception of many minority students with migration history from Asian countries such as India and China (Watkins & Noble, 2013).
and instruction, but they also serve as role models and set the tone for their classroom’s climate. The teaching workforce in Europe, in the U.S., and in Australia is, however, still largely dominated by teachers from majority groups (Reiter & Davis, 2011). The disparity between increasing student diversity and the limited cultural diversity of the teaching workforce may result in an oversight of the above-described experiences of some students from minority groups that may contribute to their unfavorable educational position. Despite efforts to better educate teachers, the availability of suitable resources for empowering teachers in accommodating diversity is still limited. As a result of the unfamiliarity of many teachers regarding matters of cultural diversity, a colorblind approach to diversity has often been prevalent in classrooms, implying that characteristics and consequences of group membership are deemphasized. Many teachers adopt such an approach with the intention to increase equality and positive intergroup relations (Gay, 2000) or, alternatively, to avoid appearing biased (Apfelbaum et al., 2008). Notwithstanding teachers’ good intentions, this approach not only ignores the realities of some students’ lives, but it may also increase the problems they experience. Not acknowledging the obstacles the students from minority groups face, such as racism and unequal access to resources, may lead to unsubstantiated attribution of persistent lower achievement of these students to a lower intellectual competence (Urias, 2006), which in turn further contributes to the reproduction of inequalities (Adams, 2007).

It is well known that teachers have a crucial role in students’ experiences and opportunities in their school trajectories (Gay, 2000); therefore, the impact of teachers’ approaches to diversity can be large. Teachers are therefore expected to have a certain level of diversity literacy, allyship, and capacity in order to respond to the varying backgrounds of their students.

Teachers’ Competence in Responding to Diversity

Within the education for social justice literature, there are numerous, overlapping discourses with a similar vision of creating environments that empower students from marginalized groups and challenging inequitable structures (Hyttten & Bettez, 2011). Amongst others, Lindsey and colleagues (2019) stipulate that individuals and organizations can effectively respond to diversity if they acknowledge the differences among their students and their families from different cultural groups, accommodate these differences, and can function in multicultural environments. Ladson-Billings (1995) uses the term culturally relevant pedagogy, which allows students with migrant backgrounds to preserve their cultural integrity and thrive academically. Comparably, Gay (2000) talks about culturally responsive teaching to describe the ways in which diversity competent teachers operate. Along similar lines, Banks introduces a broad conceptualization of multicultural education, which offers a set of practices and policies that are designed to cultivate an inclusive, tolerant, and cohesive school climate, and to provide equitable educational opportunities and reach
equitable outcomes regardless of students’ backgrounds (Banks, 2016). Some scholars, such as González and colleagues (1995), warn against the reductionist idea of culture that is dominated by static-ideas of group norms and traits, and instead prefer the term funds of knowledge that refer to individuals’ historically accumulated experiences, knowledge, and skills, and promote instruction that builds on students’ funds of knowledge.

Although a degree of uncertainty surrounds the specific strategies and practices emerging from the interconnected discourses, teachers’ effective response to diversity mainly include an inquiry on their students’ possibly different manners and preferences of communicating and learning, educating oneself about the lives and experiences of their students, identifying sources of inequality and striving for fairness, and a continuous assessment and recognition of others’ and their own cultural frames of reference and potential biases (Banks, 1981; Bennett, 1993; Boyle-Baise & Gillette, 1998; González et al., 1995; Nieto & Rolón, 1997; Sleeter, 1992; Villegas, 1991).

Severiens, Wolff, and van Herpen (2014) lay out in their review what form effective response to diversity should take in concrete classroom situations. They report that teachers should have positive multicultural attitudes, that is, that they consider diversity as a valuable source of learning and are comfortable with discussing diversity issues (Ponterotto et al., 1998). Moreover, they should actively counteract racism and promote positive relationships; use different instruction methods and perspectives to make learning relevant for a diverse student body; build on their students’ existing cultural resources; and, reflect on how knowledge is constructed from the perspective of the advantaged group (Banks, 2016). Furthermore, teachers should attempt to improve parental involvement, and are aware of certain processes that take place daily and can affect students’ academic and social identity development (e.g., stereotyping, teacher expectations; Severiens et al., 2014).

Another factor in accommodating diversity that has received attention in the literature is language development of students. The language of instruction is both an end and a medium for students who are educated in a language other than the language(s) spoken at home. Accordingly, teaching in an additional language requires the teacher’s competence to build on students’ knowledge of the host language as well as their acquired knowledge of the world in their first language, as they will use both of these resources during their additional language comprehension (Lo Bianco & Slaughter, 2009). These students not only have to learn the subject matter, but also the language of instruction (le Roux & Moeller, 2002). This can limit their access to the educational content and ability to reproduce this in the oral and written forms of academic language (Burr, 2018). Students’ comprehension of an additional language can be shaped by their first language that previously was their source of knowledge of the world and allowed them to form identities. Thus, teachers should pay attention to the influence of discontinuity between school and home cultures on students’ academic and daily use of language; to the possibility of limited comprehension of content with cultural
references; and, to classroom interactions and how rules and specific genre-specific modes of expressions of particular subject fields are applied (e.g., Mathematics; Elbers, 2010).

When teachers show such cultural capacity and adjust their instructional and relational processes to reflect their students’ cultural and language strengths, their schooling experiences have been shown to improve significantly with regard to intergroup attitudes (Plaut, Thomas, & Goren, 2009), engagement in learning (Abacioglu, Zee, et al., 2019), and academic achievement (Gay, 2000). Therefore, it has been argued that teachers should be taught and held accountable for their readiness to teach diverse student bodies in an increasingly interconnected world (Gay, 2000).

Teacher Professional Learning in Multicultural Education

Taken together, professional learning opportunities that aim to improve teachers’ effective response to diversity should target teachers’ orientation towards diversity that manifests itself in teachers’ awareness and knowledge of their students’ lives, their attitudes and beliefs around diversity, and practices that build on their students’ cultural and linguistic resources (Liang & Zhang, 2009). Amongst the approaches to teaching for social justice, multicultural education practices have been increasingly advocated by researchers and practitioners in order to effectively respond to diversity in classrooms (Parkhouse et al., 2019).

Professional learning opportunities on multicultural education ideally acquaint teachers with its underlying philosophy and equip them with the skills and knowledge necessary to incorporate multicultural practices in their classrooms. These may include lesson planning strategies, different approaches and methods that help to facilitate varying communication styles and learning about students’ preferences. Professional learning helps teachers to increase their awareness of possible biases in teaching materials, instruction, and classroom environment (le Roux & Moeller, 2002). Perhaps more importantly, professional learning should improve teachers’ attitudes and beliefs around diversity as they predict the degree to which teachers are willing to acquire the competencies expected in multicultural classrooms (Severiens et al., 2014) and adjust their practices accordingly (Opfer & Pedder, 2011).

Yet, evidence for the effectiveness of professional learning in multicultural education in positively influencing teachers’ attitudes, beliefs, and practices is rather limited. To date, empirical evidence has relied predominantly on qualitative studies that focused either on teachers in primary or in secondary schools and have been conducted within the U.S educational context. Moreover, these studies concentrated on the impact of professional learning that was received either during preservice training (e.g., Reiter & Davis, 2011; Sleeter, 2001) or during in-service years (for a review see Parkhouse, Lu, & Massaro, 2019).

Quantitative evidence on the topic is all the more limited. The few earlier quantitative studies yielded mixed results on the effectiveness of various types of preservice multicultural teacher education (reviewed in Sleeter, 2001). The results from later studies, similarly, showed
either modest improvements in preservice teacher attitudes and beliefs that did not translate to practice (Bravo et al., 2014), limited improvement of the ability to positively respond to school diversity with exceptions to students with behavioral disabilities (Gao & Mager, 2011), or no effect on teachers’ attitudes (Reiter & Davis, 2011). Parkhouse and colleagues (2019) reported that amongst the studies that measure the impact of in-service professional development through teacher reports or observation of classroom practices, only three investigated growth in teachers through quantitative measures and reported positive results. Some mixed methods studies investigating the effects of professional learning programs on pre-service teachers (e.g., Bodur, 2012) similarly reported positive effects of such programs on several competencies for teaching in urban areas.

As elucidated above, the evidence for the effectiveness of professional learning in multicultural education is mixed and scarce. At the same time, many countries are looking for ways to improve their teachers’ response to the increasing diversity in their classrooms and to eliminate the achievement gap between different groups of students (OECD, 2016). Well-trained teachers play a major role in increasing student belongingness, reducing the achievement gap between student, and shaping student success (Nieto & Bode, 2008). This suggests that more large-scale quantitative investigations that tease out the possible influence of professional learning programs are essential in examining the effectiveness of such programs in developing culturally responsive teachers (Brown, 2004). We focus our investigation on the effects of professional learning in multicultural education on teachers’ attitudes and beliefs around diversity.

The influence of the professional learning programs can change as a function of the type of program, as well as the timing of this program. In line with the specific attention in the literature to second language development, two types of teachers’ professional learning in multicultural education can be distinguished: i) professional learning in multicultural education (ME), including promoting positive community relations, developing intercultural understanding, teaching a culturally inclusive curriculum, incorporating anti-racism strategies, and teaching refugee students19 (Watkins et al., 2013), and ii) professional learning in teaching English as a Second Language (ESL)20. Although ESL is one element in multicultural education, it requires more detailed attention to methods for second language acquisition and is therefore dealt with as a distinct area of expertise in the current study (as in Watkins, Lean, & Noble, 2016).

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19 This distinction is based on secondary survey data we used for the current study (Watkins et al., 2013) and previous publications on these data (Watkins, Lean, & Noble, 2016). The survey was devised in conjunction with the New South Wales Department of Education. The specific multicultural education topics are included in the survey upon their suggestion, which at that time was providing a lot of professional learning to schools.

20 The language-focused professional learning was referred to as ESL during the time of data collection. However, currently, it is referred to as English as an Additional Language or Dialect (EAL/D) in New South Wales where the study is conducted.
Teachers who have undergone professional learning in ME might have a more concrete understanding of the multicultural strategies they can use to improve cultural inclusiveness and may dwell more explicitly on the underlying equity principle of multiculturalism compared to teachers who have undergone professional learning in ESL. The latter group, on the other hand, may have learned to use a more limited range of these strategies with the specific aim to improve the language abilities of their students (NSW Department of Education, 2018), but may have been exposed to multicultural ideologies for a longer period of time as ESL training usually takes longer than other aspects of multicultural education (NSW Department of Education, 2018).

Teachers can receive such professional learning at different points in their careers. During preservice teacher training, the range of programs focused on multicultural education tend to be collapsed into a single course within the entire degree, if addressed at all (Mills, 2008). Postgraduate qualifications (e.g., language development specialization or master’s degree), on the other hand, are more expansive and specialized (Watkins et al., 2013). Similarly, in-service professional development tends to be specific in scope and pursued at point of need to prepare the teacher for a present or a future role. They tend to be offered in the form of one-day workshops and are sometimes accompanied by additional experiences such as providing video feedback21 (Parkhouse et al., 2019).

In our study, we therefore considered the type of professional learning and the timing of the learning as factors in the effectiveness of the programs. The current study is unique in its ability to integrate information from teachers who received professional learning in different aspects of multicultural education at different stages of their careers, who are appointed to both primary and secondary schools, and who occupy both executive and non-executive teaching positions. To our knowledge, being the largest study in scale that sought quantitative evidence for the effectiveness of professional learning in multicultural education, the current study allows us to compare the strength of examined relationships between different groups of teachers that were previously investigated in isolation from each other. As a result, it can give insights on which type of professional learning when and for whom might make the biggest impact. These insights are important for researchers, educators, and policy makers who are researching ways to effectively integrate multicultural education into teacher professional learning programs, and who are debating the place of such programs in educational policy, which is still the case in many European countries that consider diversity as something to be tackled rather than embraced (European Commission Public Policy and Management Institute, 2017).

21 Although more extensive online trainings are now offered with accreditation from the New South Wales Education Standards Authority (NESA), where the current study is conducted, these do not represent the norm and were not available at the time of the data collection.
Chapter 7

The Present Study

The main question of the present study is whether teachers who have had professional learning in multicultural education differ in their approach to diversity from teachers who did not have such professional learning. Our research draws on secondary data from a state-wide survey of public school teachers in New South Wales (NSW), Australia, which was part of the three-year Australian Research Council Linkage Project Rethinking Multiculturalism/Reassessing Multicultural Education (RMRME; Watkins, Lean, Noble, & Dunn, 2013). Being one of the largest state-run and -managed education systems in the world with a culturally, ethnically, and linguistically diverse student population (Watkins et al., 2016), the NSW education system provides a compelling case to examine multicultural education.

The RMRME survey included a range of questions on i) teachers' demographics, ii) teacher professional learning in aspects of multicultural education, iii) teachers' beliefs about what are effective strategies in fostering a culturally inclusive environment, iv) their beliefs on what the important goals of multicultural education are, v) their attitudes toward diversity, schooling, and multiculturalism, and vi) their understanding of diversity.

We examined the relationship between professional learning in multicultural education, the timing of the professional learning, and teachers' attitudes and beliefs. Attitudes were operationalized as tendencies to evaluate and respond in a certain manner (Rokeach, 1968), and beliefs as representations of information (Mueller, 1986).

We expected the two types of professional learning, multicultural education (ME) and English as Second Language (ESL), to have positive relationships with teachers' multicultural attitudes and beliefs; however, since the content of these professional learning opportunities differ significantly, their relationships with attitudes and beliefs can also show differences (hypothesis 1).

Moreover, we expected the effect of these professional learning to show differences based on their timing such that postgraduate qualifications would the highest impact on teachers' attitudes and beliefs, followed by in-service professional development, and initial preservice training respectively (hypothesis 2).

In addition, we included a range of factors in our study that can contribute to the variation in reported teacher attitudes and beliefs, both at the teacher-level and at the school-level. The teacher-level factors included teachers' country of birth, their self-identified gender, years of teaching experience, and their position in school (i.e., classroom teacher or executive staff with teaching duties). Teachers’ country of birth is related to where teachers received their initial preservice training, the duration of the training, and the quality of

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22 As part of the RMRME Project, the researchers also captured perspectives of parents, students, and teachers across NSW schools regarding multiculturalism and multicultural education through focus groups and interviews. Moreover, the researchers offered multicultural training to schools that later on initiated their own action research, analyses of which are provided as the last step of the three-year RMRME project.
education (OECD, 2019). Moreover, the birth country is related to their first language, and possibly to intergroup attitudes depending on their national identity and attachment (Esses et al., 2002). These factors may influence teachers’ perspectives on diversity matters within and outside of school, since they may personally relate to these matters themselves due to their migration histories (Edwards, 2016). In addition, female teachers are previously found to be more sensitive to others’ distress (McCue & Gopoian, 2000) and hence may be more aware of adverse experiences (e.g., racism) in their students’ lives compared to their male colleagues. Furthermore, teachers who are more experienced may find it hard to modify their instruction and their methods, and adopt new approaches that are acquired through professional learning (Kennedy, 2016). On the other hand, more experienced teachers and teachers who are full-time classroom teachers with no additional executive duties (i.e., due to their position in their school) might spend more time with their students. These teachers may have more knowledge and positive intergroup attitudes due to increased exposure to different groups of students (Allport, 1954).

This could also be the case for teachers who are appointed to schools with relatively higher cultural, ethnic, and linguistic diversity. Similarly, teachers may have the opportunity to form closer bonds with their students, if they are appointed in primary compared to secondary schools, since in these schools, children usually have only one or two teachers throughout the school year. Ergo, these school-level variables were also included in our model.

**Methods**

**Participants**

In total, 55,000 permanent teachers and executive staff in 1,554 New South Wales public schools were reached via their departmental email address, 5,128 of whom responded. Among the respondents, 3,145 were teachers who had teaching duties at the time of the study (i.e., classroom teachers and executive staff with teaching duties) and were appointed to public primary and secondary schools. The rest of the teachers were either specialist teachers or were holding a non-teaching executive function only, and were appointed to schools for specific purposes (e.g., for students with intellectual disability) or in central/community schools that provide education to students from kindergarten to year 12 together (e.g., in the same room in remote rural areas). These teachers were not included in our sample. Further, 139 of the teachers were multivariate outliers and were excluded after inspecting the Mahalanobis distance ($\alpha = .05$).

Among the remaining 3,006 teachers, 70.8% were classroom teachers (with no executive duties), 29.2% were executive staff that were engaged in teaching. Forty-six-point four percent of these teachers were primary, and 53.6% of them were secondary school teachers. The teachers had an average of 18.81 years of teaching experience ($SD = 11.02$).
 Seventy-six percent of the teachers were female, 79.8% were born in Australia, 87.7% had English as their first language, and were predominantly trained in Australia (92.2%). These teachers were appointed to schools that had an average student population of 34.01% (SD = 32.53) from Language Backgrounds Other Than English (LBOTE)\(^{23}\). Twenty-six-point seven percent of the teachers reported having received professional learning in ESL and 49.4% of teachers reported having received professional learning in ME during their initial preservice training. Only 6.9% of the teachers reported having received professional learning in ESL and 5.1% of the teachers reported having received professional learning in ME as a postgraduate qualification. Thirty-three-point eight percent and 79.1% of the teachers reported having received professional learning in ESL and ME as in-service professional development respectively. Please note that teachers might be included in each of these categories.

**Analytical Approach**

The items that we used in the current study were initially grouped together in the RMRME survey to measure separate constructs (see Appendix A Table A1). This implies that the items that were grouped together should covary due to an underlying latent factor. Therefore, we chose to use *structural equation modeling* (SEM) to investigate the survey data.

In order to examine the factor structure that was suggested by the survey design, we first conducted an *exploratory factor analysis* (EFA) without imposing a specific hypothesized model. This is because we had no prior knowledge that the items did indeed measure the suggested constructs. Based on the EFA results, we specified a model (i.e., *measurement model*) and evaluated its fit using *confirmatory factor analysis* (CFA) to validate our latent constructs. CFA tests a pre-specified model by imposing the model on data and evaluating how well the model fits to the data. EFA and CFA were performed on two separate samples from our data set that we split using simple random sampling.

After performing CFA, we further expanded the measurement model by specifying relationships between the observed and the latent variables (i.e., formed the *structural model*). A few alternatives exist under the umbrella of SEM, including the Multiple Indicator Multiple Cause (MIMIC) model, where a latent factor is reflected by some observed variables (i.e., indicators) and influenced by some others (Finch & French, 2011). Accordingly, in the current study, our reflectively modelled latent constructs are said to be influenced by observed predecessor that are teachers’ background variables and school-level context variables. The latent variables were the three factors that were specified after our exploratory and confirmatory factor analyses, which are further detailed in the sections below (see also Hox and Bechger, 1998 for a more detailed explanation).

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23 This captures students who themselves or their parent(s) speak a language other than English at home (Authority Australian Curriculum Assessment and Reporting, 2019).
We used the open-source statistical software \textit{R} (RStudio Version 1.2.1335) for our analyses. Specifically, we used the R package \textit{lavaan} version 0.6-5 (Rosseel, 2012) to specify, estimate, and analyze our models.

\textbf{Survey Items}

\textit{Observed Variables: Teacher Background and School-Level Context Variables}

The observed variables included teachers’ gender identification, teaching experience in years, country of birth (also as an indication for their first language, country of their initial preservice training, and possibly, intergroup attitudes depending on their national identity and attachment; see Table 1), position in their school (i.e., classroom teacher or executive staff with teaching duties), and whether or not they had professional learning in ESL or in ME during their preservice years, as postgraduate qualifications, or during in-service professional development (represented in six binary variables). Moreover, the observed variables included school-level context variables that indicated the type of school teachers were appointed to (i.e., primary or secondary school), student percentage with language background other than English (LBOTE), and the Aboriginal and Torres Strait Islander (ATSI)\footnote{These students are Indigenous Australian individuals of Aboriginal or Torres Islander descent who identifies and are accepted by their community in which they live in as such (Gardiner-Garden, 2003).} student percentage. Except for the teacher-level variables that informed us on whether teachers undertook professional learning, the observed variables listed above were included in our SEM as control variables.

\textit{Latent Variables: Teacher Attitudes and Beliefs Around Diversity}

The items that we included in our models were initially grouped together to measure three separate constructs in the survey. The first construct was designed to reflect teachers’ beliefs about strategies in fostering a culturally inclusive environment. These strategies included both multicultural and monocultural strategies (e.g., “including Anglo-Australian heritage more” as means to improve cultural inclusiveness). The second construct was designed to reflect teachers’ beliefs about the main goals of multicultural education. The third construct was designed to reflect teachers’ attitudes on diversity, schooling, and multiculturalism (see Appendix A Table A1).

In order to test the suggested factor structure, we performed an exploratory factor analysis (EFA; see Appendix B). Results of the analysis portrayed a different factor structure than what was initially suggested by the survey. The first factor from our exploratory factor analysis included items that reflected teachers’ beliefs on the effectiveness of various multicultural strategies (but not monocultural strategies) in fostering a culturally inclusive environment. We labelled this factor ‘Beliefs on the Effectiveness of Multicultural Strategies’.
The second factor included items that reflected teachers' beliefs on equitable chances at school and in society as important goals of multicultural education. We referred to this factor as ‘Beliefs on the Importance of Equitable Chances’. The third factor included items that indicated that societies are stronger when people from different cultures assimilate, and it is not the responsibility of schools to accommodate students from diverse cultural, ethnic, and linguistic backgrounds. We therefore named this factor ‘Support for Monoculturalism’, reflecting the degree to which teachers support monocultural as opposed to multicultural attitudes at schools. The fourth factor had only two indicators and hence was excluded from further models. Based on the EFA results, we built our measurement model and validated our latent constructs using confirmatory factor analysis (CFA).

**Results**

*Confirmatory Factor Analysis on the Survey Items*

A correlation table of items with means and standard deviations is shown in Appendix A Table A2. Based on the exploratory factor analysis as described in Supplementary materials, we built a three-factor theoretical model. Table A1 presents the original outline of the items together with factors they belong to as specified in the CFA model.

We chose maximum likelihood estimation to assess the model fit and handled missing data using full-information maximum likelihood (FIML), which computes the likelihood case by case, using all available data from that case. The latent variables were allowed to covary and were constrained to have a mean of 0 and a variance of 1 (i.e., standardized) for scaling purposes, allowing free estimation of all factor loadings.

The fit indices indicated an acceptable but not an excellent fit between the model and the observed data, with the Root Mean Square Error of Approximation (RMSEA) of .07, and Standardized Root Mean Square Residual (SRMR) of .068. The comparative fit index (CFI) was .79, the Tucker-Lewis fit index (TLI) was .76, which were relatively low as the item correlations were initially low (see Appendix A Table A2). As the majority of the indexes indicated a good fit and were not out-of-step with similar studies with large participant numbers, we assumed the probability of good fit and did not perform any post-hoc modifications to the model. Expectedly, all the indicators showed significant positive factor loadings, with standardized coefficients ranging from .228 to .664 (see Appendix C Table C1).
Relationships Between the Observed Variables

Correlations between the observed variables we included in our model are presented in Table 1. Due to the high number of participants, weak correlations between many of the variables are highly significant. We, therefore, only interpreted the correlations of |.30| or higher as the relationships between the observed variables were not the main focus of our study.

The Aboriginal and Torres Strait Islander (ATSI) Student Concentration was moderately related to Concentration of Students from Language Backgrounds Other Than English (LBOTE). There seems to be significantly less ATSI population in schools with higher numbers of students from LBOTE. Twenty-point-four percent of the Aboriginal and Torres Strait Islander peoples reside in rural and remote areas where there are fewer LBOTE students, who usually cluster around the urban areas (Australian Bureau of Statistics, 2016). This could explain the significant negative correlation between ATSI and LBOTE student concentrations. We only included Concentration of Students from LBOTE in our SEM models, because it is moderately correlated with ATSI Concentration, and multicultural education is usually perceived as concerning students from LBOTE (Noble & Watkins, 2014).

In addition, teachers’ Country of Birth was significantly related to their First Language and the Country in which they received their Initial Preservice Training. Teachers who were born in a country other than Australia were more likely to have a different language than English as their first tongue and were more likely to have received their initial preservice training outside of Australia. Similarly, teachers who had their Initial Preservice Training outside of Australia were more likely to have a First Language other than English. In our SEM models, we only included teachers’ Country of Birth as a proxy for their First Language and Country of their Initial Preservice Training, which showed significant and high correlations with Country of Birth and were associated with other variables at a degree similar to that of Country of Birth (see Table 1).

Importantly, Concentration of Students from LBOTE was significantly related to teachers’ In-service Professional Development in teaching ESL, which is an expected finding because teachers who teach students from LBOTE need to improve their skills in teaching ESL. It is also interesting that teachers’ Preservice Training in ME and in ESL were significantly correlated, which may signal that preservice training programs that are attentive to one aspect of multicultural education are attentive also in the other aspect.
Table 1
Pearson Correlations Between the Observed Variables

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<td>.00</td>
<td>.05'</td>
<td>.01</td>
<td>.00</td>
<td>.00</td>
<td>.04'</td>
<td>-.01</td>
<td>-.27'</td>
<td>.31''</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Postgrad ESL</td>
<td>.00</td>
<td>.11''</td>
<td>-.07'</td>
<td>.04'</td>
<td>-.11''</td>
<td>-.13''</td>
<td>.01</td>
<td>-.09''</td>
<td>.06'</td>
<td>.16''</td>
<td>.01</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Postgrad ME</td>
<td>.03</td>
<td>.02</td>
<td>-.01</td>
<td>-.03</td>
<td>-.07''</td>
<td>-.07'</td>
<td>.03</td>
<td>-.07''</td>
<td>.04'</td>
<td>.04'</td>
<td>.06'</td>
<td>.18''</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. In-service ESL</td>
<td>-.13''</td>
<td>.31''</td>
<td>-.16''</td>
<td>.10''</td>
<td>-.02</td>
<td>-.04'</td>
<td>-.09''</td>
<td>-.03</td>
<td>.05'</td>
<td>.26''</td>
<td>.08''</td>
<td>.26''</td>
<td>.09''</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>15. In-service ME</td>
<td>-.05'</td>
<td>.05''</td>
<td>.03</td>
<td>-.01</td>
<td>-.01</td>
<td>-.17''</td>
<td>-.01</td>
<td>.18''</td>
<td>.05'</td>
<td>.09''</td>
<td>.04'</td>
<td>.05'</td>
<td>.19''</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

Note. *p < .001, ’p < .05. School type (0 = primary school, 1 = secondary school, LBOTE = Language Background Other Than English, AATSI = Aboriginal and Torres Strait Islander, sex (0 = male, 1 = female), first language (0 = other, 1 = English), birth country (0 = other, 1 = Australia), position (0 = executive teacher, 1 = classroom teacher), preservice training country (0 = other, 1 = Australia). ESL = English as Second Language, ME = Multicultural Education.
The Full Structural Equation Model

Model Fit

Our SEM is described graphically in Figure 1. We show the structural component above the latent variables, and we omitted the measurement component below the latent variables for a simpler visualization. We chose maximum likelihood estimation to assess the model fit and full-information maximum likelihood (FIML) to handle missing data. Moreover, we clustered standard errors within each school to account for the multilevel nature of the data. The latent variables were allowed to covary, and each latent variable’s scale was set to the scale of its first indicator (default by *lavaan*).

The tested model appears to be a good fit to the data looking at the RMSEA, which was .055, and at SRMR, which was .049. The CFI and TLI, however, were relatively low with .77 and .74 respectively. This is an expected result considering the item correlations that were initially low (see Appendix A Table A2). No post-hoc modifications were made to the model.

Figure 1
The Structural Equation Model

*Note.* The control variables and the observed indicators for the three latent variables are omitted from the graph for clarity. The observed variables in the graph are dummy coded (0 = no professional learning, 1 = did have professional learning). The unstandardized path coefficients of the significant relationships (α = .05) are shown on the figure (*marginally significant, p = .05*).
Table 2
Results from Structural Equation Modeling

<table>
<thead>
<tr>
<th></th>
<th>Beliefs on the Effectiveness of Multicultural Strategies</th>
<th>Beliefs on the Importance of Equitable Chances</th>
<th>Support for Monoculturalism</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE</td>
<td>p</td>
</tr>
<tr>
<td>Preservice ESL</td>
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</tr>
<tr>
<td>Preservice ME</td>
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<td>0.02</td>
<td>.009</td>
</tr>
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<td>Postgrad ESL</td>
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<td>0.04</td>
<td>.574</td>
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<td>Postgrad ME</td>
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<td>0.05</td>
<td>.234</td>
</tr>
<tr>
<td>In-service ESL</td>
<td>.06</td>
<td>0.02</td>
<td>.005</td>
</tr>
<tr>
<td>In-service ME</td>
<td>.11</td>
<td>0.03</td>
<td>.000</td>
</tr>
<tr>
<td><strong>Control Variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School Type</td>
<td>-.07</td>
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<td>.001</td>
</tr>
<tr>
<td>LBOTE</td>
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<td>0.00</td>
<td>.000</td>
</tr>
<tr>
<td>Sex</td>
<td>.14</td>
<td>0.03</td>
<td>.000</td>
</tr>
<tr>
<td>Birth Country</td>
<td>-.10</td>
<td>0.03</td>
<td>.000</td>
</tr>
<tr>
<td>Position in School</td>
<td>-.05</td>
<td>0.02</td>
<td>.014</td>
</tr>
<tr>
<td>Teaching Experience</td>
<td>-.01</td>
<td>0.00</td>
<td>.007</td>
</tr>
</tbody>
</table>

Note. School type (0 = primary school, 1 = secondary school), LBOTE = Language Background Other Than English, sex (0 = male, 1 = female), birth country (0 = other, 1 = Australia), position (0 = executive teacher, 1 = classroom teacher), preservice/postgraduate/in-service ESL or ME (0 = had no training, 1 = had training), ESL = English as a Second Language, ME = Multicultural Education.
Path Coefficients

Table 2 shows the results of our analysis. Coefficients of the significant relationships are also indicated in the structural equation model presented in Figure 1. Preservice Training on ESL had no effect on teacher attitudes and beliefs. Preservice Training on ME, however, had a significant positive effect on Beliefs on the Effectiveness of Multicultural Strategies and on the Importance of Equitable Chances for students as an outcome of multicultural education.

Teachers who received In-service Professional Development in ESL were also more likely to Believe in the Effectiveness of Multicultural Strategies for a culturally inclusive environment and less likely to show Support for Monoculturalism. Teachers who received In-service Professional Development in ESL, however, did not differ from the teachers who did not receive In-service Professional Development in ESL in their Beliefs on the Importance of Equitable Chances for students. Teachers who undertook Preservice Training and In-service Professional Development in ME followed a similar trend. Unexpectedly, Postgraduate Qualifications in either ESL or on ME did not have a significant effect on teacher attitudes and beliefs.

Moreover, there were significant correlations between the latent variables, indicating that teachers who Believed more in the Effectiveness of Multicultural Strategies were more likely to believe in the Importance of Equitable Chances for all students \((r = .69, p < .001)\) and show less Support for Monoculturalism \((r = -.65, p < .001)\). Similarly, teachers who Believe more in the Importance of Equitable Chances were less likely to show Support for Monoculturalism \((r = -.59, p < .001)\).

In addition, secondary school teachers reported to Believe less in the Effectiveness of Multicultural Strategies in creating a culturally inclusive environment compared to primary school teachers. Teachers in schools where the Concentration of Students from LBOTE was higher seem to follow a similar trend. Compared to executive staff with teaching duties, classroom teachers reported to Believe less in the Effectiveness of Multicultural Strategies in fostering a culturally inclusive classroom environment. These teachers were also more likely to Support Monoculturalism. Furthermore, teachers with more Teaching Experience were more likely to Believe that Equitable Chances are Important as goals of multicultural education compared to their less Experienced counterparts. Interestingly, at the same time, they were less likely to Believe in the Effectiveness of Multicultural Strategies for fostering cultural inclusiveness and they showed more Support for Monoculturalism as opposed to multicultural attitudes. Female teachers reported to Believe more in the Effectiveness of Multicultural Strategies in creating a culturally inclusive environment and the Importance of Equitable Chances as their positive outcomes on students compared to male teachers. Moreover, they were less likely to show Support for Monoculturalism. Expectedly, teachers with a Birth Country outside Australia followed a parallel trend.
Chapter 7

Discussion

The current study addressed several important questions in gaining more insight into the effects of professional learning in multicultural education on teachers’ approach to diversity. Drawing on (secondary) data collected in public schools in New South Wales, Australia, we examined the relationship between professional learning in multicultural education, the timing of the learning, and teachers’ attitudes and beliefs.

Type of Professional Learning

The first hypothesis was confirmed, showing that teachers who received professional learning in multicultural education (ME) during preservice and in-service years were more likely to believe that multicultural strategies are effective in fostering cultural inclusiveness and that providing equitable chances for students is an important goal of multicultural education.

Furthermore, teachers who received professional learning in teaching ESL during their in-service years were less likely to support monoculturalism, whereas there were no direct (negative) relationships between professional learning in ME at any time point and teachers’ support for monoculturalism. These findings may be attributed to the extensiveness and organization of the two professional learning programs. Becoming a discipline in its own right, professional learning in teaching ESL typically includes a rather extensive program wherein teachers have ample opportunities to engage in and reflect on multicultural strategies, compared to sporadic professional learning in ME (NSW Department of Education, 2018). A prolonged exposure to multicultural ideology might, therefore, promote multicultural as opposed to monocultural attitudes in teachers (Darling-Hammond et al., 2009). This is less likely during professional learning in ME, which is most often provided in the form of sporadic workshops, each lasting one day or less, leaving no room for supervised application to practice (Australian Curriculum Assessment and Reporting Authority, 2011).

Moreover, our results showed that teachers who received in-service professional development on teaching ESL were more likely to also believe that multicultural strategies are effective in fostering cultural inclusiveness, compared to teachers who did not receive in-service ESL professional development. This could be because ESL training includes learning how to value and incorporate students’ cultural knowledge and perspectives, and requires building on their students’ cultural and linguistic resources, and funds of knowledge; hence, making use of multicultural strategies (Banks, 2016).

Overall, compared to professional learning in ESL, professional learning in ME had stronger relationships with teachers’ beliefs on the effectiveness of multicultural strategies and beliefs on the importance of multicultural strategies in providing equitable chances, and a weaker relationship with teachers’ support for monoculturalism. These findings support
our first hypothesis, which stipulates that the two types of professional learning have positive relationships with teacher multicultural attitudes and beliefs but to different extents.

**Timing of Professional Learning**

Our results indicated that the most effective time to receive professional learning is during in-service years followed by preservice training, which only partially supported our second hypothesis. This could be due to the immediate applied value and relevance of in-service professional development for teachers’ experiences and practices (Burchell et al., 2002). Previous research showed that, according to teachers, the best time to engage in professional learning is during their initial teacher training (Watkins et al., 2013). Our results, however, imply that initial teacher training is unlikely to be sufficient in fully preparing the teachers to serve in multicultural classrooms, and it is more constructive to approach this preparation as an on-going process. It is critical that teachers persist in their efforts throughout their careers with professional development.

Contrary to our expectation that postgraduate qualifications would have the highest impact on teachers’ attitudes and beliefs, however, postgraduate qualifications in neither ESL nor ME had a significant effect. This non-significant finding could be explained by focusing on the unequal number of participants who reported to have undergone professional learning during their preservice training, as postgraduate qualification, and while in service. Considering the fact that the percentage of teachers who reported to have received postgraduate qualifications were only one fifth of the percentage of teachers who reported to have undergone preservice or in-service professional learning, the sample size of this group may not have been large enough to capture what was likely to be a small effect (see Table 2 for the effect sizes of professional learning).

**Interpretation of Control Variables**

Additionally, we also explored the relationships between control variables and teacher attitudes and beliefs. As detailed earlier, our results suggest that the more teachers spend time in a classroom due to being a primary rather than secondary school teacher, being a full-time classroom teacher rather than executive staff with teaching duties, or due to having longer teaching experience, especially with a higher amount of diversity, the less likely they believe that multicultural strategies are effective and the more likely they are to support monoculturalism. These results echo previous findings that teachers who have been teaching for a longer period report to have less positive multicultural attitudes and to engage less in prejudice reduction practices, compared to those who have been teaching for a shorter period of time (Abacioglu, Zee, et al., 2019). This may signal different processes that are worth investigating in the future. First, teachers may feel ill-equipped for accommodating diversity in the classroom (OECD, 2017), because the strategies do not seem effective or realistic, or the professional learning programs are not easily accessible. Second, on a related note,
teachers may feel discouraged with time because they do not receive sufficient institutional and administrative support. Structures surrounding the individual teachers, such as the school environment, can reproduce inequalities and teachers may perceive the reforming of these structures to be out of their reach (Banks, 2016). Third, employing multicultural strategies may increasingly exhaust teachers, because it increases the pressure towards another performance standard (OECD, 2017).

**Limitations and Future Research**

The findings of our study should be interpreted in light of certain limitations. Firstly, inspecting the standardized results from our structural equation model reveals that the effects of various professional learning opportunities on multicultural education on teacher attitudes and beliefs are rather small. In order to answer our questions, we used secondary data that were not initially collected for the purposes of our study. As follows, the RMRME survey was not particularly built to measure our latent constructs, which could explain the low effect sizes.

Secondly, due to the study’s quantitative nature, we do not know what meaning teachers ascribed to the ambiguous terminology used in the survey items, such as *culture* and *multiculturalism*. These terms can carry a wide array of definitions and what teachers understand from these terms can influence the way teachers approach sociocultural matters in their classrooms (e.g., Silverman, 2010).

Thirdly, we only had access to information on whether teachers received or did not receive professional learning in multicultural education. However, specifications of these professional learning opportunities (e.g., content, duration) that may influence the effects of professional learning on teacher attitudes and beliefs were not reported. For instance, in-service professional learning programs that are more intense and more frequent were found to be positively associated with increased teacher and student learning (as reported in Darling-Hammond et al., 2009). Moreover, we investigated the effects of having had professional learning during preservice training, as postgraduate qualification, or as in-service professional development separately. We did not, however, consider how teachers differed in their attitudes and beliefs if they received professional learning at more than one point in time. Having received professional learning during preservice years might have influenced the effectiveness of professional learning during in-service years. Similarly, we did not examine whether having had both types of professional learning compared to one would make a difference in influencing teachers’ attitudes and beliefs around diversity.

Lastly, the results of our study could also be due to a selection bias in the sample, because the teachers who chose professional learning in multicultural education may already have had more positive beliefs about the effectiveness of multicultural strategies. We therefore did not claim a causal relationship between beliefs and professional development. It is clear that teachers who received professional learning during their postgraduate studies...
and in-service years are likely to have some positive beliefs about such programs in order to invest time in it, and the positive relationship implies that such professional programs are also likely to increase one’s positive beliefs about multiculturalism. This is a reciprocal influence of beliefs, attitudes and professional learning.

Our findings signal that the relationships investigated in the current study are worth further examination. Building on our findings, prospective research can use items that were especially formulated to assess our latent constructs to reach more robust and reliable results. Moreover, it would be interesting to examine whether the items measure the same underlying constructs in different groups of teachers who reside in rural compared to urban areas who experience diversity to different extents. Furthermore, asking teachers to report on the specifications of their professional learning (e.g., recency, content, duration) can further our understanding in the effectiveness of such learning opportunities. Importantly, controlled experiments with which we can compare advancements in teacher attitudes and beliefs before and after receiving professional learning (versus control group), and longitudinal research to understand its long-term effects are needed to establish the causal influence of professional learning on teachers’ approaches to diversity. These studies can also overcome our last limitation by incorporating the number of times and different types of professional learning teachers receive in their design.

**Conclusion**

Our research investigated the role of different types of professional learning in multicultural education in different forms during teachers’ educational trajectories on their approach to diversity. Despite its potential limitations, our research supplements the literature in important ways. Professional learning in multicultural education (ME) and on teaching English as a second language (ESL) seems to be related to teachers’ attitudes and beliefs to different extents. A prolonged exposure to multicultural ideology, which is the case in most professional learning opportunities in ESL compared to ME, seems to have the possibility to be more effective in attitude change compared to a change in teacher beliefs. Moreover, our results indicate that in-service professional development in multicultural education can have a stronger effect on teachers’ multicultural attitudes and beliefs, compared to the initial preservice training. It is very likely that we found in-service professional development to be more effective because it is more relevant to teachers’ experiences at the time of the professional learning. Therefore, experiences with students with different cultural, ethnic, and linguistic backgrounds through, for instance, compulsory internships at schools in urban areas, may render the content of the initial preservice training in multicultural education more relevant for practice. These experiences not only facilitate connecting professional learning content with classroom practices, but also provide an extended exposure to multicultural perspectives that may stimulate teachers to form cultural
self- and other-awareness, and better understand what role these perspectives play in their students’ lives and schooling opportunities (Santoro, 2014). Additionally, our results suggest that these professional learning opportunities might especially benefit primary compared to secondary school teachers, classroom teachers compared to executive staff with teaching duties, teachers who are appointed to schools with higher percentage of students from language backgrounds other than the host language, and teachers who have been in the teaching force for a longer period.
Appendix A

Table A1
Survey Items and the Latent Factors They Indicate in our Models

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>20. Please rate each of the following school strategies in terms of their effectiveness in fostering cultural inclusiveness along a scale of least to most effective (1 = least effective, 5 = most effective)</td>
<td></td>
</tr>
<tr>
<td>a. Increasing involvement of parents from culturally and linguistically diverse backgrounds</td>
<td>F1</td>
</tr>
<tr>
<td>b. Holding events to celebrate cultural diversity</td>
<td>F1</td>
</tr>
<tr>
<td>c. Including Anglo-Australian heritage more</td>
<td>F3</td>
</tr>
<tr>
<td>d. Implementing anti-racism strategies</td>
<td>F1</td>
</tr>
<tr>
<td>e. Developing cross-cultural curriculum</td>
<td>F1</td>
</tr>
<tr>
<td>f. Improving all students’ academic outcomes</td>
<td>F1</td>
</tr>
<tr>
<td>g. Providing bilingual instruction</td>
<td>F1</td>
</tr>
<tr>
<td>h. Improving intercultural relations among students</td>
<td>F1</td>
</tr>
<tr>
<td>i. Including Aboriginal perspectives in the curriculum</td>
<td>F1</td>
</tr>
<tr>
<td>j. Accommodating diverse cultural learning styles</td>
<td>F1</td>
</tr>
</tbody>
</table>

21. What do you see as the main goals of multicultural education? Please rate each of the following along a scale of least to most important (1 = least important, 5 = most important)

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Developing shared social values</td>
<td>F2</td>
</tr>
<tr>
<td>b. Achieving equity in student learning outcomes</td>
<td>F2</td>
</tr>
<tr>
<td>c. Giving students the right to maintain and develop their cultural heritage</td>
<td>F1, F2</td>
</tr>
<tr>
<td>d. Giving all students equal chances to share in Australia’s social, political and economic life</td>
<td>F2</td>
</tr>
<tr>
<td>e. Combating racism and discrimination</td>
<td>F2</td>
</tr>
<tr>
<td>f. Developing students’ proficiency in English language and literacy</td>
<td>F2</td>
</tr>
<tr>
<td>g. Developing harmonious cross-cultural relations and intercultural understanding</td>
<td>F2</td>
</tr>
<tr>
<td>h. Developing a commitment to Australian identity</td>
<td>F2, F3</td>
</tr>
<tr>
<td>i. Fostering of skills in languages other than English</td>
<td>F1</td>
</tr>
</tbody>
</table>
Table A1
Continued

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you agree or disagree with the following statements? (1 = strongly disagree, 5 = strongly agree)</td>
<td></td>
</tr>
<tr>
<td>30. Multicultural education should be a focus for all schools including those with few students from language backgrounds other than English.</td>
<td>F3</td>
</tr>
<tr>
<td>31. It is the responsibility of schools to cater for the needs of students from diverse cultural and linguistic backgrounds.</td>
<td>F3</td>
</tr>
<tr>
<td>32. It is not the responsibility of schools to address racism or discrimination in their schools.</td>
<td>F3</td>
</tr>
<tr>
<td>33. It is a good thing for schools to have students from different cultures.</td>
<td>F3</td>
</tr>
<tr>
<td>34. Society is weakened when people of different ethnic origins maintain their cultural traditions.</td>
<td>F3</td>
</tr>
<tr>
<td>35. Racism is a problem in Australian society.</td>
<td>F4</td>
</tr>
<tr>
<td>36. Racism is a problem in schools.</td>
<td>F4</td>
</tr>
</tbody>
</table>

Note. F = Factor. F1 = Beliefs on the Effectiveness of Multicultural Strategies. F2 = Beliefs on the Importance of Equitable Chances. F3 = Support for Monoculturalism. F4 was omitted from the models. The items are numbered according to their position in the survey. For the full survey, please see Watkins, Lean, Noble, and Dunn (2013).
### Table A2
*Survey Item Correlations and Descriptive Statistics*

|     | 20a  | 20b  | 20c  | 20d  | 20e  | 20f  | 20g  | 20h  | 20i  | 21a  | 21b  | 21c  | 21d  | 21e  | 21f  | 21g  | 21h  | 21i  | 30   | 31   | 32   | 33   | 34   | 35   | 36   | M    | SD   |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 20a |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |     |     |     |     |     |     |     | 3.97| 0.91|
| 20b | .32''|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |     |     |     |     |     |     |     | 3.86| 0.94|
| 20c |      | .08''|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |     |     |     |     |     |     |     | 3.09| 1.02|
| 20d | .29''| .30''| .13''|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |     |     |     |     |     |     |     | 4.09| 0.86|
| 20e | .26''| .32''| -.02''| .39''|      |      |      |      |      |      |      |      |      |      |      |      |      |      |     |     |     |     |     |     |     | 3.99| 0.87|
| 20f | .16''| .07''| .11''| .21''| .18''|      |      |      |      |      |      |      |      |      |      |      |      |      |     |     |     |     |     |     |     | 4.25| 0.89|
| 20g | .21''| .20''| .07''| .18''| .28''| -.10''|      |      |      |      |      |      |      |      |      |      |      |      |     |     |     |     |     |     |     | 2.94| 1.10|
| 20h | .37''| .34''| -.01''| .40''| .39''| .19''| .33''|      |      |      |      |      |      |      |      |      |      |      |     |     |     |     |     |     |     | 4.11| 0.83|
| 20i | .27''| .32''| .03''| .34''| .41''| .19''| .26''| .42''|      |      |      |      |      |      |      |      |      |      |     |     |     |     |     |     |     | 3.89| 0.98|
| 20j | .29''| .27''| -.05''| .27''| .44''| .19''| .34''| .44''| .45''|      |      |      |      |      |      |      |      |      |     |     |     |     |     |     |     | 4.00| 0.92|
| 21a | .21''| .20''| .15''| .21''| .17''| .16''| .11''| .26''| .15''| .16''|      |      |      |      |      |      |      |      |     |     |     |     |     |     |     | 4.06| 0.99|
| 21b | .24''| .14''| .04''| .23''| .20''| .33''| .12''| .26''| .23''| .24''| .34''|      |      |      |      |      |      |      |     |     |     |     |     |     |     | 4.47| 0.69|
| 21c | .26''| .32''| -.08''| .22''| .35''| .10''| .28''| .33''| .34''| .36''| .29''| .36''|      |      |      |      |      |      |     |     |     |     |     |     |     | 4.06| 0.88|
| 21d | .20''| .13''| .01''| .24''| .19''| .23''| .08''| .27''| .20''| .19''| .32''| .44''| .39''|      |      |      |      |     |     |     |     |     |     |     | 4.47| 0.68|
| 21e | .18''| .24''| -.04''| .45''| .26''| .15''| .14''| .36''| .30''| .24''| .27''| .35''| .39''| .41''|      |      |      |     |     |     |     |     |     |     | 4.55| 0.66|
| 21f | .12''| .09''| .14''| .17''| .07''| .24''| .06''| .11''| .10''| .08''| .22''| .29''| .12''| .28''| .29''|      |     |     |     |     |     |     |     | 4.55| 0.66|
| 21g | .23''| .30''| -.04''| .27''| .32''| .12''| .17''| .41''| .30''| .30''| .36''| .32''| .45''| .40''| .50''| .23''|     |     |     |     |     |     |     | 4.43| 0.69|
| 21h | .07''| .07''| .40''| .11''| -.02''| .15''| .03''| .07''| .06''| -.01''| .32''| .17''| .03''| .22''| .14''| .30''| .23''|     |     |     |     |     |     |     | 3.98| 0.96|
| 21i | .16''| .21''| .10''| .14''| .24''| .12''| .39''| .21''| .23''| .27''| .25''| .20''| .42''| .18''| .22''| .18''| .32''| .21''|     |     |     |     |     |     |     | 3.42| 1.04|
| 30  | .21''| .25''| -.13''| .21''| .34''| .07''| .19''| .28''| .31''| .30''| .18''| .21''| .40''| .19''| .28''| .01''| .34''| -.07''| .25''|     |     |     |     |     | 4.12| 0.81|
**Table A2**  
*Continued*

| 20a | 20b | 20c | 20d | 20e | 20f | 20g | 20h | 20i | 21a | 21b | 21c | 21d | 21e | 21f | 21g | 21h | 21i | 30  | 31  | 32  | 33  | 34  | 35  | 36  | M   | SD  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 31  | .19 | .19 | -.13 | .15 | .27 | .07 | .14 | .20 | .21 | .28 | .12 | .23 | .32 | .18 | .20 | .09 | .26 | -.04 | .16 | .45 | -   | 4.29 | 0.75 |
| 32  | -.13 | -.11 | .11 | -.18 | -.17 | .08 | -.06 | -.19 | -.16 | -.15 | -.10 | -.16 | -.18 | -.17 | -.24 | -.05 | -.18 | .04 | -.04 | -.23 | -.32 | -   | 1.37 | 0.69 |
| 33  | .14 | .16 | -.13 | .11 | .24 | .11 | .13 | .21 | .20 | .21 | .16 | .20 | .30 | .22 | .22 | .08 | .26 | -.07 | .20 | .38 | .33 | -.26 | -   | 4.57 | 0.61 |
| 34  | -.14 | -.13 | .22 | -.12 | -.20 | -.06 | -.13 | -.16 | -.20 | -.20 | -.04 | -.11 | -.34 | -.13 | -.19 | .01 | -.22 | .20 | -.18 | -.30 | -.25 | .23 | -.34 | -   | 1.97 | 1.02 |
| 35  | .08 | .03 | -.11 | .17 | .12 | .02 | .07 | .15 | .09 | .10 | .02 | .09 | .13 | .10 | .22 | .00 | .13 | -.10 | .05 | .19 | .11 | -.12 | .18 | -.08 | -   | 3.82 | 0.88 |
| 36  | .05 | .01 | -.10 | .16 | .10 | -.01 | .08 | .12 | .08 | .08 | .00 | .04 | .09 | .05 | .16 | -.02 | .09 | -.10 | .07 | .17 | .09 | -.08 | .13 | -.07 | .73 | -   | 3.52 | 0.93 |

Note. *p < .05. **p < .01. Items were rated on a 5-point Likert-type scale (1 = least effective/least important/strongly disagree, 5 = most effective/most important/strongly agree).
Appendix B

Exploratory Factor Analysis on the Survey Items

We executed a parallel analysis to evaluate the number of factors to choose for factor analysis. The parallel analysis indicated that the maximum number of factors we could consider is 8. The parallel analysis scree plot in Figure B1 shows a solid (blue) line between the triangles, which represents the eigenvalues of actual data; and, two dashed (red) lines, placed on top of each other, that represent simulated and resampled data. On the plot, we have to examine the large drops in the actual data and determine the point where it levels off to the right. Moreover, we identify the point where the distance between simulated and actual data tends to be minimum, referred to as the point of inflection.

Based on the analysis and the plot, anywhere between 2 and 8 factors could be considered. As the items were presented together to reflect three constructs in the survey, we started with assessing the fit of a three-factor model.

Figure B1
Parallel Analysis Scree Plot for Exploratory Factor Analysis

We considered the loadings that were more than .3 and did not load on more than one factor. Based on our cutoff, one item became nonsignificant, and 4 factors loaded on more than one factor.

To reach a simpler factor structure, we then continued with conducting factor analysis with four factors and used the same cut-off. With the current model, we reached a simpler structure but did not reach the simple structure, wherein there are no items that load on
more than one factor as there were still 2 items that did so. Yet, a five-factor structure did not provide us with a theoretically sound model. Therefore, we decided on the four-factor model (see the factor loadings on Table B1).

The root mean square of the residuals (RMSR) was .04, which is acceptable as this value should be close to 0. The RMSEA (root mean square error of approximation) index was .061, showing a relatively good model fit. Lastly, the Tucker Lewis Index of factoring reliability was .83, an acceptable value.

Table B1
Three- and Four-Factor Model Factor Loadings

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<th>Item</th>
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<th>Four-factor model loadings</th>
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*Note.* F = Factor.
## Appendix C

### Confirmatory Factor Analysis

#### Table C1

*Results from Confirmatory Factor Analysis*

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*Note. F = Factor.*
Multiculturalism has become a highly contested topic across many European and other Western countries for its effectiveness in fostering social membership of minoritized populations (Mikelatou & Arvanitis, 2019). Although initially considered an aid to integration in the Netherlands, implementation of multicultural practices has been abandoned, because multicultural policies were criticized for failing to reduce educational disadvantages and to improve integration of minoritized students (Rijkschroeff et al., 2005). Yet, the same challenges continue to exist today under the current educational integration policies and practices. Students from minoritized groups report feeling less and less at home due to discrimination and perceived lack of equal representation and opportunities in the Netherlands. Additionally, students from these groups continue to have a more disadvantaged educational position and continue to be overrepresented in lower academic tracks compared to their ethnic majority counterparts (Huijnk & Andriessen, 2016).

Persistence of the same challenges despite different policies, as well as the inconclusive findings about the type of policy (i.e., multicultural or civic integration) that yields the most favorable integration outcomes (Lutz, 2017), suggest a change in focus. In this dissertation, we shift from central integration policies to decentralized teacher interpretation and implementation of multicultural practices within their corresponding classrooms (Driessen, 2012). The role of teachers’ responsiveness to diversity in the classroom and how it relates to students’ social and academic experiences are not well explored. The current dissertation tried to fill this gap by offering an analysis of the relationship between teachers’ multiculturalism and student experiences, which teachers are more likely to adopt multicultural practices, and whether professional learning can motivate teachers to endorse a multicultural approach.

We operationalized teacher multiculturalism based on the practices Banks delineated into five distinct but related categories (Banks, 2004). In his conceptualization of multicultural education, teachers should employ content integration from a variety of cultures in what they teach, reflecting and representing the diversity of their students through texts, histories, values, beliefs, and varying perspectives from different cultures (Koshy, 2017). Moreover, teachers should increase their students’ awareness of the knowledge construction process and help students to be critical about who the knowledge serves and from whose perspective it was constructed (e.g., cultural references, biases). Next, teachers should aim for prejudice reduction by modifying their students’ attitudes through teaching methods, materials, and dialogue to decrease negative and improve positive intergroup relations by actively counteracting social biases (i.e., prejudice, stereotyping, discrimination). Further, teachers should aim for an empowering school culture and social structure, by examining disproportionality in attendance and achievement between groups in various aspects of school (e.g., to giftedness programs). Lastly, teachers should strive for equity pedagogy, i.e., equity in how they teach, by modifying their teaching to include various teaching and assessment styles to facilitate the learning and academic achievement of all students. This
General Discussion

requires avoiding standardized, one-size-fits-all approaches to teaching and learning, relating content to students’ lives and creating opportunities for them to engage with learning in accordance with how they engage with the world (e.g., cooperative learning, problem-based learning, role-playing, simulations).

With this conceptualization in mind, our research was guided by the following three questions: i) Does a multicultural approach potentially benefit students’ peer relationships and educational functioning at the classroom level?, ii) Which teachers are more likely to adopt a multicultural approach?, and iii) Would teachers benefit from professional learning on multicultural education and if so, how? In the remainder of this chapter, I interpret the findings of this dissertation in three separate parts to answer these questions. This will be followed by discussing the scientific contributions of the dissertation, and I conclude by sketching future directions and implications of our findings for practice.

PART I: “Does a multicultural approach potentially benefit students’ peer relationships and educational functioning when investigated at the classroom level?”

Intergroup Contact Theory suggests that situations in which individuals from different groups come together on fairly equal terms (i.e., equal status), with the support of social and institutional authority figures, and in cooperative environments, intergroup contact can help to reduce intergroup bias and improve interpersonal interactions (Allport, 1954; Pettigrew & Tropp, 2006). In the education context, this would imply that improved peer relationships can contribute to students’ feelings of relatedness. According to Self-Determination Theory, this is a basic psychological need of all students; and, the fulfillment of this need is directly related to the extent to which students are intrinsically motivated to engage in learning and the learning environment (i.e., student engagement; Deci & Ryan, 1985; Reeve, 2012). Grounded on the premises of these two theories, in PART I of this dissertation, we investigated teachers’ prejudice reduction, content integration, and equity pedagogy practices in relation to students’ peer relationships and motivation. Chapters 2 to 4 lend support for these propositions by demonstrating the positive relationship between multicultural education, peer relationships, and motivation; and, at the same time, draw boundary conditions under which multicultural education is more beneficial.

In Chapter 2, we approached classrooms as complex social systems (Bronfenbrenner & Morris, 2006). Particularly, we charted the network architecture of the reciprocal interactions between prejudice reduction, students’ peer relationships, and their motivation to learn (a strong predictor of academic attainment and achievement; Lee, 2014) within the classroom complex system, wherein the effect of each of these constructs depended on the nature of the other (Burns & Knox, 2011). The findings obtained from comparing network structures of the majority and minoritized group students clearly indicated that different aspects of teachers’ prejudice reduction practices had positive effects on students’ peer relationships and motivation, albeit at varying degrees depending on students’ backgrounds: i) dialogue
about different cultures and importance of fairness towards different others had a stronger connection to minoritized students’ motivation, ii) approachability and acting against discrimination had positive connections to positive peer relationships and motivation, regardless of students’ ethnic background. Notably, peer relationships emerged as a central factor especially in minoritized students’ motivation. Thus, charting the network structures of classroom interactions revealed the specific mechanism through which prejudice reduction can influence students, and the findings suggested a possible mediation effect of peer relationships on the relationship between teacher multiculturalism and student engagement (further tested, partially in Chapter 3, and fully in Chapter 4).

In Chapter 3, we used a directional model to investigate the effect of prejudice reduction on students’ engagement, with teachers’ explicit multicultural attitudes and implicit attitudes towards minoritized ethnic groups as possible moderators to this relationship. In this chapter, we adopted a slightly narrower operationalization of prejudice reduction, referring to engaging in dialogue about issues around diversity wherein teachers actively confront prejudice, stereotyping, and discrimination. The findings from this chapter further supported the positive influence of teachers’ prejudice reduction practices on students’ engagement, regardless of students’ ethnic backgrounds. This was, however, only the case for teachers who exhibited positive multicultural attitudes above the average level of other teachers.

Chapter 4 investigated the effects of the equity pedagogy, content integration, and prejudice reduction dimensions of multicultural education on students’ engagement, and their peer relationships as a mediator to these relationships, in classrooms with high and low ethnic minoritized student concentrations. This chapter illustrated the positive effect of equity pedagogy. At the same time, a negative effect of content integration on peer relationships was found, and through these relationships on students’ engagement, in classrooms with a relatively small number of students with a minoritized ethnic background. In classrooms characterized by relatively high number of students with a minoritized ethnic background, the mediation effects were not statistically significant, while equity pedagogy did have a direct positive effect on students’ engagement. Unlike in Chapters 2 and 3, in none of these intergroup contexts did we find a significant effect of prejudice reduction on students. Unfortunately, we did not measure teachers’ attitudes in Chapter 4. However, it is possible that the positive effect of prejudice reduction could only have been identified for teachers who held above average positive multicultural attitudes (as in Chapter 3).

Taken together, we have established the positive implications of different aspects of prejudice reduction in Chapters 2 and 3, and equity pedagogy in Chapter 4, for students’ peer relationships and engagement. Next to the positive implications of multicultural practices, the pattern of findings from the three studies signaled to certain boundary conditions under which multicultural education is most likely to have success: i) when teachers emphasize unifying factors next to differences between groups of students, ii) when multicultural
practices are implemented in a non-superficial manner, iii) when students’ peer relationships have more to gain from multicultural education.

Firstly, based on our findings from Chapter 4, it appears that, in classrooms wherein the disadvantaged position of minoritized students is accentuated through the numerical composition of the classroom, teaching pedagogies that combat structures of inequality (i.e., equity pedagogy) can benefit peer relationships, whereas highlighting group differences through content integration can negatively affect peer relationships, and through these relationships, students’ engagement. The status differences between student groups may also explain why in classrooms characterized by a high number of students from minoritized backgrounds, these mediation effects were no longer statistically significant, while equity pedagogy and peer relationships still had direct positive effects on students’ engagement.

Given former research, this was not a completely unexpected finding. It has been previously suggested that majority group members can develop negative attitudes towards their outgroup members if their perceived representativeness of the larger social context is challenged (Steffens et al., 2017). One way to pose this challenge is through bringing out the diversity of perspectives and values in a particular social context where the majority group members are also in numerical majority. In such contexts, majority group members are more likely to see themselves as highly representative of the context (e.g., Dutch people in the Netherlands) compared to environments in which they are likely to see themselves as just another ethnic group among many others, thus in contexts where they are in numerical minority (e.g., Dutch people in Europe).

Because content integration explicitly highlights and celebrates the diversity of the society and its people, and therefore explicitly acknowledges the diversity of the social context, we believe that content integration might have challenged the perceived representativeness of the majority group members in classrooms where they were also in numerical majority. Equity pedagogy, on the other hand, is a rather subtle form of multicultural education. It avoids standardized, one-size-fits-all approaches to teaching and learning and relates content to students’ lives and creates opportunities for them to engage with learning in various forms. This is different from the more explicit mentioning of intergroup biases through prejudice reduction or to including content from different cultural perspectives into the curriculum and instruction through content integration. The positive influence of a subtler form and the negative effect of a more overt form of multicultural education signal to a need for emphasizing the unity of cultural groups around shared values and psychological needs when differences between students are made explicit (Bokhorst-Heng, 2007).

Secondly, a boundary condition frequently mentioned in the literature concerns the implementation quality of multicultural practices. When implemented superficially, content integration runs the risk of perpetuating existing stereotypes, and all too often, content integration is applied in the form of celebrating ethnic foods, music, and traditional clothes (Sleeter & McLaren, 2009). This could have contributed to the negative effect of content
integration on peer relationships that we found in Chapter 4. This deviates from the actual intentions of content integration that aims to provide accurate representation and knowledge of cultural groups that may be mis- or underrepresented in teaching materials and offer perspectives on people’s lives that are not reduced to their known stereotypes (Banks, 2004). It is possible that, when adopted for a longer time, or implemented more profoundly, familiarizing students with different perspectives increases empathy and improves positive attitudes. We could not capture such dynamism within our sample in Chapter 4.

In line with this account, in Chapter 3, teachers who had positive multicultural attitudes above the average level of other teachers stood out amongst the others. Based on our findings, only these teachers could successfully improve student engagement through prejudice reduction practices. Although teachers in our samples mostly reported to be familiar with and sensitive to issues of cultural pluralism (i.e., positive multicultural attitudes) as they undoubtably want to accommodate their students to the best of their abilities, in all likelihood, only teachers with above average positive multicultural attitudes not only talk about multiculturalism as an abstract ideal, but they are also able to lead by example. When endorsing a multicultural approach, self-reflection and knowledge enough to lead a meaningful and effective dialogue around diversity seem to be key. Without a certain affinity with the discussed diversity issues, application of a multicultural approach due to expectations from educational institutions or social demands from colleagues is likely to be ineffective or to have negative effects on student outcomes, as teachers may risk appearing unauthentic (Kreber, 2010; Palmer, 1998).

Lastly, in intergroup contexts and for students whose relatedness needs are rather thwarted, multicultural practices may have a bigger impact on students’ motivation. In Chapter 4, we found that equity pedagogy and content integration had significant effects on peer relationships in classrooms characterized by a relatively low number of minoritized students, and no significant effect on peer relationships in intergroup contexts characterized by rather high number of minoritized students. As the relationships in the latter are more likely to be more balanced and on fairly equal terms, they are possibly less likely to predominate students’ educational experiences. Indeed, in these classrooms, peer relationships were also found to have a weaker influence on student engagement. Next, in concordance with this proposition, in Chapter 2, peer relationships emerged as a central factor in minoritized, but not majority, students’ motivation. Since minoritized students experience higher levels of intergroup bias (i.e., prejudice, stereotyping, discrimination; Huijnk & Andriessen, 2016), it is possible that peer relationships are a more salient aspect of their educational lives and have a rather immediate effect on their motivation. For majority group students who, on average, report lower levels of intergroup bias, peer relationships probably do not occupy such an important role in their educational functioning. These findings together imply that multicultural practices may be more beneficial for students when their peer relationships have more to gain from these practices. As such, the strength of the basic psychological need
for relatedness may moderate the effects of need satisfaction on motivation (as manifested in students’ engagement).

In view of the findings aforementioned, it seems pivotal to approach multicultural education also through the lens of equity pedagogy. Just as with other pedagogical practices, one size does not seem to fit all in multicultural education. Different dimensions of multicultural education, or even different aspects of a same dimension, seem to potentially have different impact on different groups of students, in different intergroup contexts. Therefore, these practices should be implemented by teachers who are reflective and knowledgeable enough to recognize and distinguish their students’ needs and can calibrate their teaching and discourse accordingly. Teachers’ efforts should not only be directed at superficially acknowledging and celebrating differences but should also incorporate in-depth dialogue over diverse perspectives and experiences and accentuate the unity of cultural groups in the diversity of the larger social context (Bokhorst-Heng, 2007).

PART II: “Which teachers are more likely to adopt a multicultural approach?”

In the second part of this dissertation, we examined teacher characteristics that are potentially important antecedents of teachers’ responsiveness to diversity in their daily interactions in and around the classroom, as well as in curriculum and instruction. These antecedents reflected i) teachers’ abilities in understanding other people’s goals, intentions, or behaviors either through accurately understanding emotional phenomena (i.e., emotional intelligence) or through taking the perspective of the other (i.e., perspective taking); and, ii) teachers’ familiarity with and sensitivity to diversity, and awareness in their own biases and cultural frames of reference (i.e., multicultural attitudes) that predisposes their behaviors.

Findings from two studies showed that teachers who are more mindful of their own biases and cultural frames of reference and are comfortable with and sensitive to cultural pluralism (i.e., multicultural attitudes) are, in general, more understanding of their students and their behaviors during daily interactions, regardless of their ethnic backgrounds. Together with teachers’ abilities to take other people’s perspectives, these multicultural attitudes seem to also support teachers’ attempts to understand differences in their students’ needs and effectively navigate through these differences in their curriculum and instruction.

It has been widely documented that teachers are more likely to have positive interactions with majority groups students than with minoritized students (Thijs et al., 2012). These students, in addition, are more often subjected to disciplinary sanctions, and are treated more harshly (Peguero & Shekarkhar, 2011; Rocque & Paternoster, 2011), even after controlling for achievement and behavior (Glock, 2016). Potential misunderstandings of students’ behaviors due to cultural differences have been suggested to, at least in part, account for these discrepancies in teacher interventions (van Tartwijk et al., 2009). Chapter 5, therefore, tested whether teachers differed in their interventions towards minoritized students compared to majority group students for the same kind of misbehavior and whether
this difference was related to two factors that can affect teachers’ correct assessment of student behavior: their multicultural attitudes and their abilities to recognize and interpret emotions. We did not find differences in teacher interventions to misbehaviors carried out by students with or without a migrant background. Notably, however, teachers who held more positive multicultural attitudes showed significantly more tolerant (e.g., discuss the misbehavior) than dismissive (e.g., expel) intervention strategies towards students, regardless of students’ ethnic backgrounds.

Building on these findings, and on a vast body of previous qualitative research, Chapter 6 sought quantitative evidence in support of two teacher qualities that are suggested to be important factors in multicultural curricular and instructional practices (culturally responsive teaching in this case): their multicultural attitudes and abilities to take others’ perspectives (Rychly & Graves, 2012). Our results indicated that both teacher characteristics are antecedents of practices that require willingness, effort, and ability to understand individual differences that relate to the cultural backgrounds of their students (e.g., using the cultural background of students to make learning meaningful). It is not surprising that the multicultural attitudes, which we found to determine the effectiveness of prejudice reduction on student engagement in Chapter 3, also predict the extent to which teachers employ these multicultural practices in the first place. Teachers’ familiarity with and sensitivity to issues of cultural pluralism, might hint to their heightened critical consciousness, thus their ability to recognize inequity and interpersonal biases, and their subsequent commitment to challenging them (Gay & Kirkland, 2003). As such, their efforts around diversity issues are likely to be due to a genuine interest and their beliefs in the effectiveness of multicultural practices, which underlies their success in improving student engagement (Chapter 3). Importantly, although to a lesser extent, the same teacher characteristics also predicted practices that require tapping individual differences between students and their social and academic needs that are not necessarily due to cultural elements (e.g., understanding academic strengths and weaknesses of students, promoting positive relationships with classmates). This may signal to an overall responsiveness of teachers that possess these characteristics.

**PART III: “Would teachers benefit from professional learning on multicultural education and if so, how?”**

Having unveiled the possible benefits of multicultural education on students’ peer relationships and engagement, and some of the important possible precursors of a multicultural approach to diversity, the remaining question is how we can prepare and encourage teachers to endorse a multicultural approach. On this account, in Chapter 7, we investigated whether teachers who have participated in professional learning in multicultural education differed in their approach to diversity from teachers who did not have such professional learning.
Professional learning opportunities that aim to improve teachers’ effective response to diversity ideally target teachers’ awareness and knowledge of their students’ lives, their attitudes and beliefs around diversity, and practices that build on their students’ cultural and linguistic resources (Liang & Zhang, 2009). In Chapter 7, we focused our investigation on the relationship between professional learning in multicultural education and teachers’ attitudes and beliefs around diversity.

Two types of multicultural professional learning opportunities for teachers were distinguished: i) professional learning in multicultural education (ME) and ii) professional learning in teaching English as a Second Language (ESL). Although ESL is one aspect of multicultural education that also incorporates elements of, for instance, inclusive curriculum and anti-racism, it requires more detailed attention to methods for second language acquisition and is therefore dealt with as a distinct area of expertise in this chapter (as in Watkins, Lean, & Noble, 2016).

Our results confirmed that, compared to teachers who did not receive any professional learning, teachers who received professional learning in ME, but also in ESL, were more likely to believe in the effectiveness of multicultural strategies in fostering cultural inclusiveness and recognize providing equitable chances for all students as an important goal of multicultural education. In addition, teachers who followed professional learning in ESL were less likely to support monoculturalism (as opposed to multiculturalism) compared to the teachers who did not receive any training. Having received professional learning in ME, however, did not have such significant effect on teachers’ monocultural attitudes.

These results signal that while learning about multicultural strategies can be an effective tool to change teachers’ beliefs around the goals and effectiveness of these strategies, it may not be enough to change teachers’ general multicultural attitudes. These findings may be attributed to the extensiveness and organization of the two professional learning programs. Becoming a discipline in its own right, professional learning in teaching ESL in New South Wales (where the study was conducted) typically includes a rather extensive program wherein teachers have ample opportunities to engage in and reflect on multicultural strategies, compared to sporadic professional learning in ME (NSW Department of Education, 2018). A prolonged exposure to multicultural ideology might, therefore, promote multicultural as opposed to monocultural attitudes in teachers (Darling-Hammond et al., 2009). This is less likely during professional learning in ME, which is most often provided in the form of sporadic workshops, each lasting one day or less, leaving no room for supervised application to practice (Australian Curriculum Assessment and Reporting Authority, 2011).

Moreover, our results indicated that the most effective time to receive professional learning is during in-service years, compared to during the initial preservice training or as part of a postgraduate qualification. These results imply that initial teacher training is unlikely to be sufficient in fully preparing the teachers to serve in multicultural classrooms, and it is more constructive to approach this preparation as an on-going process. In addition, our
results suggested that some teachers are likely to benefit more from professional learning than others, which is further discussed in ‘Implications for Practice’.

**Scientific Contributions**

Moving away from the discussions in the literature on the effectiveness of multiculturalism as part of a central integration policy, this dissertation concentrated on teachers’ interpretation and implementation of multicultural practices at a classroom level. Teachers’ multicultural approach to diversity can manifest itself in different forms, from attitudes and beliefs around diversity to inclusive curriculum and instruction, and daily interactions. It is therefore hard to conceptualize and operationalize multiculturalism and multicultural education, which is also evident from the plethora of definitions that refer to the intertwined and overlapping conceptual and pedagogical philosophies within the literature (Dover, 2013).

To understand the multiple meanings of a multicultural approach, within this dissertation, the conceptualization, operationalization, and analysis of teacher multiculturalism are therefore also manifold and cover a large ground ranging from its implications to its antecedents and development. This adds valuable insights to the literature focusing on equity in education that centers mostly on the U.S. educational contexts and relies heavily on qualitative approaches (Agirdag et al., 2016). In approaching teacher multiculturalism from different angles, the current dissertation documents several contributions to the teaching for social justice literature and research in educational psychology.

**Classrooms as Complex Systems**

Complex systems are characterized by multiple variables that are in constant interaction with each other and are part of other complex systems (Burns & Knox, 2011). Such a relational model of classrooms as complex systems has been previously put forth by researchers within Applied Linguistics (Burns & Knox, 2011). In this model, classrooms are not merely the context of teacher practice, but themselves are systems in which teachers are one of the multiple agents that continuously interact with each other, and changes in one have an impact on all the other agents and variables that are part of the classroom complex system.

Despite conceptualization of classrooms as complex systems, modeling of the statistical relationships between the components of these systems has been absent from the literature to date. In Chapter 2, we introduced a first application of state-of-the-art exploratory research methods to educational research in which psychometric network models were used to map out different aspects of students’ lives in relation to each other. The use of network modeling for exploratory studies has been extensively applied in personality

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25 Previously referred to as psychological networks.
research (e.g., Costantini et al., 2015), and has been insightful in various other fields of research such as health sciences, social relations, and more recently psychopathology and psychiatry (e.g., Isvoranu et al., 2019). However, this type of analysis was not yet applied in the field of education at the time of our study.

Distinct from social networks (Wasserman & Faust, 1994), psychometric networks (Borsboom & Cramer, 2013; Epskamp, Borsboom, & Fried, 2018) are abstract models comprised of a set of nodes that represent variables (e.g., attitudes, symptoms, test items), a set of edges that represent unknown statistical relationships between nodes, and information about the nature of the nodes and edges (e.g., strength of the relationships). The estimation of edges separates psychometric networks from social networks in which the links between the nodes are already known (Epskamp & Fried, 2016).

The hypothesis generating and exploratory nature of the network approach extends the benefits of hypothesis testing statistical techniques widely used in the social sciences (extensively discussed in Chapter 2). Complex systems can better approach reality (Bronfenbrenner, 1979) and represent students’ developmental environments with improved methodological rigor (De Schryver et al., 2015). We therefore expect this innovative and comprehensive modeling approach to substantially contribute to our knowledge about interpersonal processes in educational contexts.

**Measuring Teachers’ Multiculturalism**

Throughout the dissertation, we experimented with different ways through which we can measure teachers’ multiculturalism, reflected in their daily interactions, and their curricular and instructional practices. In doing so, we have developed tools that can benefit future efforts to study multiculturalism in the classroom.

To study teachers’ daily interactions with students from different ethnic backgrounds, in Chapter 5, we first determined the issues and areas of concern within Dutch classroom through teachers’ reports on the kinds of problematic situations they face within their classrooms and how they react to these situations. Using a free association paradigm to investigate which specific student behaviors teachers associate with problematic situations allowed us to get an understanding on the current state of affairs in Dutch primary school classrooms. This investigation revealed similarities between the student behaviors associated with problematic situations in the Netherlands and various other parts of the world (e.g., Iran: Aliakbari et al. 2013; US: Beaman et al., 2007; UK: Houghton et al., 1988; Spain: Kyriacou & Martin, 2010; Australia: Little, 2005; Norway: Stephens et al., 2005; China: Sun & Shek 2012; Turkey: Türnüklü & Galton 2001). Based on teacher reports on frequent problematic student behaviors and how they manage these problematic situations, we developed vignettes to investigate teachers’ intervention strategies to student misbehaviors more broadly. Given the revealed similarities across countries, the collection of these vignettes based on actual teacher reports offer a valuable tool to study sensitive aspects of teachers’ day-to-day
Similarly, next to teachers’ daily interactions, to investigate teachers’ curricular and instructional practices, we have adapted the Culturally Responsive Teaching Self-Efficacy Scale (CRTSES; Siwatu, 2007). The adapted scale measures the frequency with which teachers apply multicultural practices rather than their self-efficacy beliefs in applying those practices. We have successfully conducted research with this adapted tool both in Chapter 4 and 6. Using this tool, we found empirical support for teacher characteristics that were suggested to be important antecedents of culturally responsive teaching in previous qualitative studies, and demonstrated the relationship of the culturally responsive teaching practices with students’ peer relationships and motivation. As such, we have not only provided empirical confirmation of the importance of these teacher characteristics for multicultural education and of multicultural education for students’ social and academic functioning, but we have also offered a new way to study teacher multiculturalism through the adapted questionnaire.

**Implications of Multicultural Education**

In investigating the implications of teacher multiculturalism for students, we used the broad 5-dimensional conceptualization of multicultural education brought forward by Banks (2004). In adopting such a broad conceptualization, we were able to examine i) how different aspects of multicultural education function for different groups of students, and ii) how these aspects independently relate to students’ peer relationships and engagement in different intergroup contexts.

Firstly, the extant research to date on the effects of school diversity policies (e.g., multiculturalism, colorblindness) focuses either on the school adjustment of minoritized students, or on aspects of intergroup relations (e.g., attitudes, prejudice, stereotyping; as reported in Celeste et al., 2019). Rarely, however, have researchers sought quantitative evidence on the effects of diversity practices on student outcomes. Rarer still are the comparative investigations of the effects of these practices on majority and minoritized group students. It has been suggested that valuing cultural diversity can be costly on majorities who may feel excluded, alienated, or challenged (Jansen et al., 2015; Plaut et al., 2018; Steffens et al., 2017; Stevens et al., 2008). Yet, we are not aware of any studies that investigated the role of diversity practices on student outcomes in different ethnic groups. Two recent studies investigated the role of school diversity policies, but not practices, on student outcomes in both majority and minoritized student groups (Baysu et al., 2021; Celeste et al., 2019). These studies conceptualized school multicultural policies as ‘valuing diversity’, referring to a narrower construct than multicultural education that does not include multicultural pedagogical practices or prejudice reduction efforts. To the best of our knowledge, the study detailed in Chapter 2 is the first to have comprehensively investigated the distinctive effects
of aspects of multicultural education on minoritized and majority group students’ school outcomes.

A related contribution of this dissertation is the quantitative examination of distinct dimensions of multicultural education in relation to students’ peer relationships and engagement with learning and school. On a larger scale, the effect of multiculturalism on intergroup relations and participation in country’s institutions occupy the political discourse on integration. While Dutch integration policies abandoned multiculturalism due to being considered a responsible factor for integration difficulties of minoritized groups (Rijkschroeff et al., 2005), examining these interactions at a classroom level with different demographic profiles (in Chapter 4) actually revealed the possible positive effects of multiculturalism. This provides a contrasting story against populist anti-immigration rhetoric, which has been growing in Europe under the increasing influence of far-right parties in legislative bodies and have deemed multiculturalism ineffective (Mikelatou & Arvanitis, 2019). Importantly, in the course of examining various different dimensions of multicultural education, we have identified certain boundary conditions for the effectiveness of these practices. These boundary conditions might help to explain the criticism towards forms of multiculturalism as reifying groups as separate entities, ignoring similarities, and ultimately rationalizing segregation (Barry, 2001; Brewer, 1997; Turner, 1993 as reported in Verkuyten, 2005).

Although the boundary conditions yield only circumstantial evidence for the suggested costs of multiculturalism on majority group students, the negative effect of content integration on peer relationships within classrooms where the majority group students are in numerical majority (Chapter 4) is not at odds with possible negative effect of, at least, this aspect of multicultural education on majority group members’ outgroup attitudes. Given the findings from Chapters 2 and 4, this dissertation inspires distinct but related theoretical predictions for the majority and minoritized group students, and for different dimensions of multicultural education within different intergroup contexts. In line with our complex systems approach to classrooms, the experiences of students are not isolated from each other. It is, therefore, worth conducting in-depth investigations of the effects of different multicultural practices on majority next to minoritized students within different group dynamics, not least to optimally improve intergroup relationships and minoritized students’ educational positions.

**Teacher Professional Learning**

Professional learning opportunities in multicultural education are not prevalent in the Netherlands, even though teachers list teaching in multicultural/multilingual settings as one of the areas in which they need more training (OECD, 2019). We therefore turned to New South Wales, Australia, and examined the extent to which investing in such professional learning opportunities could benefit public school teachers’ approach to diversity and, as such, potentially improve their performance in accommodating students from diverse backgrounds.
Previous evidence for the effectiveness of such programs in positively influencing teachers’ attitudes, beliefs, and practices is rather limited and mixed (for a review see Parkhouse et al., 2019). To our knowledge, being the largest study in scale that sought quantitative evidence for the effectiveness of professional learning in multicultural education, the study detailed in Chapter 7 allowed us to compare the possible influence of professional learning in multicultural education between different groups of teachers that were previously investigated in isolation from each other. This research was unique in its ability to integrate information from teachers who received professional learning in different aspects of multicultural education at different stages of their careers, who were appointed to both primary and secondary schools, and who occupied both executive and non-executive teaching positions. As a result, it gave us unparalleled insights on which type of professional learning when and for whom might make the biggest impact (further discussed under ‘Implications for Practice’).

Limitations and Future Research

This dissertation was not without its limitations. It is recommended that further research be undertaken keeping the following limitations in mind: Firstly, an arguable weakness is the lack of a unified operationalization of teacher multiculturalism throughout the dissertation. This added to our understanding of different aspects of multiculturalism and multicultural education, but it has also lowered the comparability of our results across the studies.

Secondly, Chapters 2 and 5 aimed to map out differences in classroom dynamics between the ethnic majority Dutch group and specific minoritized groups. In these chapters, the minoritized groups were comprised of individuals with a migration background from Turkey and Morocco. This choice was based on their relatively high levels of experienced exclusion (Huijnk & Andriessen, 2016) and the discussion on cultural diversity in the Netherlands that revolves around issues pertinent to Islam (Verkuyten & Martinovic, 2006). In contrast, the main interest of Chapters 3 and 4 was not determining differences in these groups’ experiences from that of the majority group. In these chapters, we simply utilized minoritized status to control for the effect of teachers’ and students’ ethnic backgrounds, and only measured the share of minoritized students in classrooms.

Minoritized groups in the Netherlands, however, have different migration histories and occupy different hierarchical positions within society, with minoritized groups from former colonies on the top and the groups with history of migration from Turkey at the bottom of the hierarchy (Weiner, 2015). Teachers’ preferable preconceptions about one ethnic group over another could itself influence the degree to which they incorporate multicultural practices in their teaching. Similarly, the extent to which students benefit from these practices could differ as a function of their hierarchical position in the society. Future research is encouraged to examine whether psychological and behavioral principles established within our studies are
applicable to different minoritized groups than groups with Turkish and Moroccan migration history. These studies can furthermore examine whether applications of these principles to classrooms with different ethnic profiles in different neighborhoods, and increasing/decreasing diversity as the share of one ethnic group grows warrant alternative solutions.

Thirdly, our findings are limited by our cross-sectional design. Further research in the effects of continued engagement with multicultural practices as well as in their lasting effects are, therefore, essential next steps in creating a more complete understanding of multiculturalism. For instance, the negative influence of content integration on peer relationships (Chapter 4) may be an artifact of initial reactions from students who, in time, learn to take and appreciate each other’s perspectives. On a related note, teachers themselves may become more skilled in time in incorporating multicultural practices. As teachers do not receive a formal training as to how to effectively respond to diversity in their classrooms, we do not know how skilled teachers in our sample were in adopting these practices. Perceptions of the students, as well as the quality of the implementation may in fact be different from how teachers perceive their practices to be. What one teacher judges as good content integration may be considered a superficial practice for others. Although quantitative research offers robust and generalizable results, further research is encouraged to supplement it with a qualitative approach to gain more insights into the quality and content of teacher practices.

Additionally, further studies regarding the role of student engagement on teacher practices would be worthwhile as the cross-sectional nature of our studies prevents us from making definite claims about the suggested direction of effects. When discussing our statistical models and results, we mostly assumed a unidirectional feed forward effect of multicultural education on students’ peer relationships and engagement. Yet, students’ motivation can have a feedback effect on the way teachers, as well peers, respond to them. In line with a complex systems approach to classrooms, it is worth investigating the reciprocal connections between students’ motivation, as expressed through their engagement, and teacher practices (Skinner & Pitzer, 2012). Do increases in student engagement in turn increase teacher competence, autonomy, and support? Similarly, do students who show initially higher levels of engagement show higher increases in their engagement, and benefit more from multicultural practices? Following up the same classrooms across the school year can deepen our understanding of how these feedback loops affect each other over time.

Lastly, we tried to respond to our research question about the effectiveness of professional learning in multicultural education based on findings from a study conducted in Australia. We do not yet know how the conclusions we make about the possible positive impact of professional learning on multicultural education would transfer to the Netherlands. Australia is one of the first countries to introduce multiculturalism in political and educational spheres (Bulmer & Solomos, 2012). From the introduction of multiculturalism until the time of our research, we could expect certain advancements in how professional learning is
Chapter 8

tailored and delivered to the teachers in Australia. Therefore, future professional learning opportunities in the Netherlands may need to undergo substantial crafting before they can instigate positive impact on teachers. More positively, however, teachers in the Netherlands may benefit more from these professional learning opportunities as they have more to gain considering the current lack of formal education on responding to diversity.

On a related note, we found positive relationships between professional learning and teachers’ multicultural attitudes and beliefs. This, however, does not guarantee that teachers’ attitudes and beliefs will translate to actual behavior. Structures surrounding the individual teachers, such as the school environment, can reproduce inequalities. Teachers may perceive the reforming of these structures to be out of their reach unless they receive sufficient institutional and administrative support (Banks, 2016). It would be fruitful for future research to examine to what extent and under which circumstances do factors such as teacher attitudes and beliefs translate to actual multicultural practices. Such research is especially relevant given our encouraging findings that multicultural attitudes are not only important for the adoption of multicultural practices, but also the effectiveness of such practices in improving students’ engagement with learning.

Implications for Practice

It is well known that teachers have a crucial role in students’ experiences and opportunities in their school trajectories (Gay, 2000); therefore, the impact of teachers’ approaches to diversity can be large. We found that a multicultural approach to diversity can benefit all students’ peer relationships and engagement with learning, under certain boundary conditions. Based on our findings, we can devise the following recommendations for educators and policy makers who aim to improve and implement a multicultural approach to diversity in the classroom.

Corroborating earlier findings (Steffens et al., 2017), we found that certain aspects of multicultural education, perhaps also because they are implemented superficially, could have a negative impact on peer relationships (Chapter 4). It is possible that activating the idea of otherness through reifying group distinctions, especially if they perpetuate stereotypes, could jeopardize the quality of intergroup relationships, and through these relationships, students’ educational functioning. This signals to the importance of not only acknowledging and celebrating differences between cultural groups, but also celebrating and accentuating the values that bring groups together.

The evidence from our studies suggests that teachers who can take the perspectives of their students, who value diversity of perspectives, and who are aware of their own biases (i.e., multicultural attitudes) are also more likely to be better negotiators of such complexities of diversity in the classroom. Although many teachers report having egalitarian self-concepts and value diversity, and therefore to have positive multicultural attitudes, our results indicated that only the teachers who hold relatively strong positive multicultural attitudes
could have a strong impact on students’ educational functioning through multicultural practices (in this case prejudice reduction). This implies that top-down school policies may not be effective in improving student outcomes unless teachers themselves are ready to walk the talk and are proactive rather than reactive to the needs of their students. Therefore, it is advisable that professional learning opportunities target teachers’ multicultural attitudes before they provide them with a blueprint for employing multicultural practices.

We found that, while short term professional learning can demonstrate the effectiveness and importance of multiculturalism, a prolonged engagement with multicultural ideology and practices, providing ample opportunities to engage in and reflect on multicultural strategies, may be necessary to change teachers’ multicultural attitudes. In-service professional development, compared to initial preservice training, can be especially effective in improving teachers’ multicultural attitudes and beliefs. This is probably the case because in-service professional development is more relevant to teachers’ experiences at the time of the professional learning. In-service professional development tends to be specific in scope and pursued at point of need to prepare the teacher for a present or a future role (Parkhouse et al., 2019). Since student teachers do not have practical experiences with many components of multicultural education, these components do not go beyond abstractions for these teachers (Gay & Kirkland, 2003). Experiences with students with different cultural and linguistic backgrounds through, for instance, compulsory internships at schools in urban areas, may render the content of the initial preservice training in multicultural education more relevant for practice.

Along these lines, Warren (2018) recommended three specific professional learning experiences that could further improve teachers’ attitudes, beliefs, and perspective taking abilities. First, teachers should be exposed to texts written by culturally and linguistically diverse individuals in order to better recognize, determine, and scrutinize examples of institutionalized oppression. Second, teachers should participate in the social worlds and realities of individuals from cultural communities that differ from their own. Meaningful direct contact with people from diverse backgrounds (Allport, 1954), and opportunities to reflect on how culture shapes our values, beliefs, biases, and behaviors have been shown to improve attitudes and awareness (Case, 2007). Third, these experiences should be accompanied by critical dialogue with colleagues on a regular basis. Introspection on emotional, behavioral, and cognitive reactions towards students and their families should form the basis of these dialogues.

Therefore, teacher education experiences similar to that recommended by Warren (2018) can be incorporated to teacher professional learning programs. This would support teachers’ capacities to become more effective in teaching a diverse student body. Importantly, our results suggest that strengthening these capacities would not only improve the culturally sensitive teaching but also teaching in a socially sensitive manner to student needs in
general. As such, strengthening these capacities would benefit all students regardless of their backgrounds.

Findings from our study conducted in New South Wales suggested that professional learning in multicultural education can especially benefit teachers who would be expected to spend longer time in the classroom, and teachers who are or will be teaching in rather heterogeneous classrooms. Specifically, primary compared to secondary school teachers, classroom teachers compared to executive staff with teaching duties, teachers who are appointed to schools with higher percentage of students from minoritized backgrounds, and teachers who have been in the teaching force for a longer period may benefit more from professional learning as these teachers reported to believe less in the effectiveness of multicultural strategies in fostering cultural inclusiveness. Several mechanisms could be underlying these findings. First, teachers may feel ill-equipped for accommodating diversity in the classroom (OECD, 2017), because the strategies do not seem effective or realistic, or the professional learning programs are not easily accessible. Second, as previously mentioned, teachers may feel discouraged with time because they do not receive sufficient institutional and administrative support (Banks, 2016). Third, employing multicultural strategies may increasingly exhaust teachers if it increases the pressure towards another performance standard they have to meet (OECD, 2017). Regardless of the mechanism involved, teachers cannot be expected to effectively respond to diversity unless they are trained for it. This stresses the importance of institutional and administrative legitimization and support for teachers’ efforts to adapt to the diverse needs of their students (Tatar & Horenczyk, 2003).

**Concluding Remarks**

To conclude, this dissertation provides the first comprehensive assessment of teachers’ multicultural practices in the Netherlands. Returning to the questions posed at the beginning of this dissertation, we can conclude that multicultural education can contribute to students’ positive peer relationships and engagement for students from both minoritized and majority groups, albeit within certain boundaries. In substantiating this, this dissertation has been one of the first attempts to apply a complex systems framework for studying classroom interactions and appears to offer the first comparison of the experiences of majority and minoritized students. Our findings are encouraging in that teachers who can take the perspectives of their students and who hold positive multicultural attitudes seem to be more likely to endorse multiculturalism in their curricula, instruction, and daily interactions. A prolonged, in-service professional learning opportunity in multicultural education can be effective in improving these teacher qualities that are essential for teachers’ effective response to diversity. Well-trained teachers, in turn, can play a major role in increasing student belongingness, reducing the achievement gap between student, and shaping student success (Nieto & Bode, 2008).
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## Appendix A

### Supplementary Chapter 2

### Tables

**Table S1**  
*Majority Group Raw Centrality Measures*

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### Table S2

*Minority Group Raw Centrality Measures*

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Figures

Figure S1
Turkish-Dutch and Moroccan-Dutch Networks Compared (before merging the samples)

(a) Turkish Minority Group

(b) Moroccan Minority Group
Supplementary Procedure: Bootnet Analysis

A detailed methodological background for this method of estimation can be found elsewhere (Epskamp et al., 2018). For the analyses, the R package ‘bootnet’ (Epskamp et al., 2018), and for the visualization of the plots, the R package ‘ggplot2’ (Wickham, 2016) has been used. For high-resolution images of the following figures, please download Multimedia Component 3 and 4.

Accuracy of Estimations

How Accurate are the estimated network connections?
Please continue to the next page for the accuracy estimation plots.

---

Appendices

Figure S2
Accuracy of the Estimated Network Connections for the Majority Dutch Group

Note. The red lines indicate the sample values for the native-Dutch group, while the grey areas indicate bootstrapped confidence intervals. The sample values lie within the bootstrapped confidence intervals and thus reflect accurate estimations.
Figure S3

Accuracy of the Estimated Network Connections for the Minority Group

Note. The red lines indicate the sample values for the minority (i.e., Turkish-Dutch and Moroccan-Dutch) group, while the grey areas indicate bootstrapped confidence intervals. The sample values lie within the bootstrapped confidence intervals and thus reflect accurate estimations.
Appendices

**Stability of Centrality Indices**

How stable are the estimated centrality indices? A more detailed methodological background for this method of estimation can be found elsewhere (Epskamp et al., 2018).

**Figure S4**

*Stability of Centrality Indices for the Majority Dutch Group*

*Note.* Centrality indices seem interpretable based on CS coefficients .36 for ‘betweenness’, .36 for ‘closeness’, and .59 for ‘strength’; though, for ‘betweenness’ and ‘closeness’ with more care.
**Figure S5**

*Stability of Centrality Indices for the Minority Group*

Note. Centrality indices seem interpretable based on CS coefficients .28 for ‘betweenness’, .28 for ‘closeness’, and .59 for ‘strength’; though, for ‘betweenness’ and ‘closeness’ with more care.

**Difference in Edge-weights and Nodes**

Do network connections and centrality estimates for different variables differ from each other? A detailed methodological background for this method of estimation can be found elsewhere (Epskamp et al., 2018).
Appendices

Figure S6
Majority Group (i.e., native-Dutch group)

Note. Gray boxes indicate nodes (right side) or edges (left side) that do not differ significantly from one-another and black boxes represent nodes or edges that do differ significantly from one-another. Here, we can observe many edges and nodes that significantly differ from each other, meaning our network stability can be interpreted as high.

Figure S7
Minority Group (i.e., Turkish–Dutch and Moroccan-Dutch group)

Note. Gray boxes indicate nodes (right side) or edges (left side) that do not differ significantly from one-another and black boxes represent nodes or edges that do differ significantly from one-another. Here, we can observe many edges and nodes that significantly differ from each other, meaning our network stability can be interpreted as high.

---

27 As can be seen in the figure, much more than half of the edges within the networks can be interpreted as significantly different from one another (i.e., black boxes; $\alpha < .05$) and we are therefore “safe” to say than one edge is stronger than another edge when interpreting the network.
Appendix B

Supplementary Chapter 4

Exploratory Factor Analysis

The value of Kaiser–Meyer–Olkin Measure of Sampling Adequacy (KMO) was .60, indicating that the strength of the relationships among items was mediocre, and Bartlett’s test of sphericity was significant, $\chi^2(78) = 4583.719, p < .001$. These results indicate that the data meets the assumptions for factor analysis.

The factor analyses were performed using the Principal Axis Factoring extraction method that, unlike Maximum Likelihood method, does not require to meet specific assumptions regarding the items such as normal distribution. Initial EFA using Oblimin rotation and 3 forced factors indicated low correlations between the extracted factors, ranging between .10 to .33. We therefore reran the EFA using Varimax rotations that does not assume the factors to be correlated. The first of the extracted factors had an eigenvalue of 3.598 and accounted for 27.7% of the variance in the data. Factor two had an eigenvalue of 1.726 and accounted for further 13.3% of the variance. The last factor had an eigenvalue of 1.115 and accounted for another 8.6% of the variance. Together the factors accounted for 49.6% of variance. Both theoretical criteria and empirical criteria obtained from the EFA results were used to specify the multicultural education factors content integration, prejudice reduction, and equity pedagogy (see Table S1 for the factor loadings resulted from EFA).

28 It, however, does not provide fit statistics such as chi square.
### Table S1

*Culturally Responsive Teaching (CRT) Scale Exploratory Factor Analysis Results*

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<th>Factor Loadings</th>
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</thead>
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<td></td>
<td>Factor 1</td>
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<tr>
<td>CRT1. Adjust instructions to cater to the needs of my students.</td>
<td>.24</td>
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<tr>
<td>CRT3. Assess whether my students rather work alone or in a group.</td>
<td>.48</td>
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<tr>
<td>CRT5. Identify aspects in which the school culture (for example, values, norms,</td>
<td>.43</td>
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<tr>
<td>and practices) differs from the home culture of my students.</td>
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<tr>
<td>CRT12. Establish community between students when my class exists of students</td>
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<tr>
<td>from various backgrounds.</td>
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<td>CRT13. Use the cultural background of my students to make learning meaningful.</td>
<td>.59</td>
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<td>CRT16. Obtain information regarding the cultural background of my students.</td>
<td>.48</td>
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<td>CRT19. Design a classroom environment with attributes that represent a variety</td>
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<td>of cultures.</td>
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<td>CRT26. Help students establish positive relationships with their classmates.</td>
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<td>CRT27. Revise educational materials to improve its’ representation of cultural</td>
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<td>CRT30. Design tasks in the classroom in a way which helps improve the</td>
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<td>understanding of students studying Dutch.</td>
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*Note. CI = Content Integration, PR = Prejudice Reduction, EP = Equity Pedagogy*
### Classroom Concentration Correlation Matrices for the Structural Equation Models

#### Table S2

Low Concentration Classroom Correlation Matrix for the Structural Equation Model

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<td>0.301</td>
<td>-0.131</td>
<td>-0.316</td>
<td>0.465</td>
<td>0.356</td>
</tr>
<tr>
<td>CI</td>
<td>-0.133</td>
<td>-0.047</td>
<td>-0.092</td>
<td>-0.084</td>
<td>0.014</td>
<td>-0.104</td>
<td>-0.208</td>
<td>0.100</td>
<td>-0.014</td>
<td>-0.143</td>
<td>-0.131</td>
<td>-0.141</td>
<td>0.126</td>
<td>-0.191</td>
<td>-0.205</td>
<td>0.445</td>
<td>-0.216</td>
<td>-0.150</td>
<td>0.080</td>
<td>0.126</td>
</tr>
<tr>
<td>PR</td>
<td>-0.050</td>
<td>-0.031</td>
<td>-0.070</td>
<td>-0.045</td>
<td>-0.006</td>
<td>-0.138</td>
<td>-0.064</td>
<td>0.009</td>
<td>-0.037</td>
<td>-0.062</td>
<td>0.057</td>
<td>0.050</td>
<td>-0.044</td>
<td>0.007</td>
<td>0.019</td>
<td>0.011</td>
<td>0.004</td>
<td>0.048</td>
<td>0.003</td>
<td>-0.033</td>
</tr>
<tr>
<td>EP</td>
<td>-0.139</td>
<td>-0.004</td>
<td>-0.074</td>
<td>-0.072</td>
<td>0.013</td>
<td>-0.051</td>
<td>-0.207</td>
<td>0.086</td>
<td>-0.103</td>
<td>-0.126</td>
<td>-0.074</td>
<td>-0.049</td>
<td>0.095</td>
<td>-0.154</td>
<td>-0.097</td>
<td>-0.003</td>
<td>-0.147</td>
<td>-0.072</td>
<td>-0.005</td>
<td>0.056</td>
</tr>
</tbody>
</table>

Note. Items: St Eng = Reflective factors: Student Engagement (items 1-6 behavioral engagement), Peer Rel = Peer Relationships; Formative factors: CI = Content Integration, PR = Prejudice Reduction, EP = Equity Pedagogy
### Table S3

High Concentration Classroom Correlation Matrix for the Structural Equation Model

| Item     | St Eng_1 | St Eng_2 | St Eng_3 | St Eng_4 | St Eng_5 | St Eng_6 | St Eng_7 | St Eng_8 | St Eng_9 | St Eng_10 | St Eng_11 | St Eng_12 | Peer Rel_1 | Peer Rel_2 | Peer Rel_3 | Peer Rel_4 | Peer Rel_5 | Peer Rel_6 | Peer Rel_7 | Peer Rel_8 | Peer Rel_9 | Peer Rel_10 | PR | EP | SD |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-----------|---|----|----|
| Value    | 1.000    | 0.197    | 0.304    | 0.192    | 0.346    | 0.344    | 0.068    | 0.196    | 0.288    | 0.351    | 0.067    | 0.025    | 0.110      | -0.025     | 0.113      | -0.007     | 0.142      | 0.069      | 0.012      | 0.031      | -0.008     | -0.002     | 0.68 | 1.00 | 0.92 |

Note. Items: St Eng = Reflective factors: Student Engagement (items 1-6 behavioral engagement), Peer Rel = Peer Relationships; Formative factors: CI = Content Integration, PR = Prejudice Reduction, EP = Equity Pedagogy
Appendix C

Supplementary Chapter 5

Part 1 - Pilot Study

The first aim of this pilot was to identify misbehaviors that teachers face in their classrooms. Teachers were asked to describe a problematic incident they had recently experienced in class due to student misbehaviors (e.g., aggression between students, no attention to the lesson, absent-mindedness). The second aim was to identify teachers’ interventions. They were therefore asked to describe their immediate and/or delayed interventions to the incident. The results of this pilot study were used when preparing the measurement of teacher interventions in our main study, which subsequently tested our hypotheses.

Method

Participants, Procedure, and Measures

We conducted the pilot study using an online survey with open-ended questions. In total, 25 participants were reached via a Facebook advertisement, targeting teachers in Dutch primary schools located in Amsterdam.

Following the steps of Hsieh and Shannon (2005), we performed content analysis on the reported problematic incidents and teacher interventions. We assigned a code to each answer in order to reduce our data. Answers related to the same misbehavior within the problematic incidents and same teacher interventions were respectively clustered together to detect patterns and trends, on which we grounded our conclusions.

Since student misbehaviors were relatively well studied in the literature, and the nature of the identified misbehaviors in our study was in line with misbehaviors identified in primary and secondary schools from various parts of the world—for instance, from United Kingdom (Houghton, Wheldall, & Merrett, 1988), from Australia, (Little, 2005), from Norway, (Stephens, Kyriacou, & Tønnessen, 2005), and from China (Sun & Shek, 2012)—we used predetermined codes (i.e., directed content analysis) obtained from a similar exploratory study of Sun and Shek (2012) for clustering the reported misbehaviors. However, since teachers’ intervention strategies are less studied—especially in the Netherlands context—and since they are the main interest of our study, we did not use premeditated codes when analyzing the reported teacher interventions in order to permit the clusters to emerge from the data (i.e., conventional content analysis).

Results and Discussion

Every teacher described one problematic incident he/she recently experienced in the classroom (i.e., 25 reported incidents in total). The main misbehavior categories that emerged
from the described problematic incidents were ‘verbal and physical aggression’, ‘talking out or turn/hindering others’, ‘disrespecting the teacher’, and ‘non-attentiveness/daydreaming/idleness/sleeping’.

Table S1
Summary of Teacher Perceptions on Student Misbehaviors

<table>
<thead>
<tr>
<th>Misbehavior Category</th>
<th>Frequency of Misbehavior</th>
<th>Frequency of Incidents Involving Ethnic Minority Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal and physical aggression</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Talking out of turn, hindering others</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Disrespecting the teacher</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Non-attentiveness, daydreaming, idleness, sleeping</td>
<td>5</td>
<td>2</td>
</tr>
</tbody>
</table>

*Note.* Some of the reported problematic incidents involved more than one category of misbehavior.

We asked each teacher to indicate their immediate and/or delayed intervention(s) to the problematic incident they reported. While most of the intervention categories we identified are punitive in nature, the most frequently reported teacher intervention to the student misbehaviors (‘discuss the misbehavior with the student in private’) is relatively neutral (Table 2). This finding is in line with that of previous studies, which suggest that teachers, in general, react often mildly rather than harshly to common student misbehaviors (e.g., talking out of turn; Glock, 2016). Moreover, rewarding good behavior could be a long-term follow-up intervention that might not have been captured within the scope of our study. Alternatively, as we asked teachers to indicate only problematic incidents, we might have primed them to report mostly punitive or neutral interventions to the misbehaviors described in the incidents.

Table S2
Summary of Teacher Interventions to Student Problem Behaviors

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warn &amp; express disapproval (warn)</td>
<td>7</td>
</tr>
<tr>
<td>Give detention/time-out/send out of class (expel)</td>
<td>8</td>
</tr>
<tr>
<td>Discuss the behavior with the student in private (discuss)</td>
<td>16</td>
</tr>
<tr>
<td>Contact parents</td>
<td>3</td>
</tr>
</tbody>
</table>

*Note.* There are more than 25 interventions, because some of the reported interventions were assigned to more than one category.
The most frequently reported student misbehaviors and teacher interventions were used to create the instrument for measuring teacher interventions in the main study. The misbehaviors summarized in Table 1 were used to create short vignettes describing student misbehaviors, and the teacher interventions summarized in Table 2 were used to create options for teachers to report on the interventions they would give to the misbehaviors described in the vignettes. Next to the teacher interventions identified in the pilot study, we also provided the teachers with an intervention option of ‘doing nothing’. This is because during the pilot study, we asked teachers to report on what they did when they faced with a recent problematic incident. However, this might have led them to feel obliged to report an actual action. However, ‘doing nothing’ could in itself be an intervention.

**Part 2 - Measuring Teacher Interventions**

**Table S3**

*Vignettes and their two version per scenario*

<table>
<thead>
<tr>
<th>VIGNETTE</th>
<th>VERSION 1</th>
<th>VERSION 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>not cooperating with others</td>
<td></td>
</tr>
<tr>
<td>EN</td>
<td>XX does not want to cooperate with the other students during an in-class group exercise. This behavior is disrupting for the classroom atmosphere and the other students cannot work on their exercise.</td>
<td>XX refuses to work within a group during a class activity. This behavior is disturbing overall atmosphere and the other classmates cannot focus on their activity.</td>
</tr>
<tr>
<td>NL</td>
<td>XX wil niet meedoen met de andere leerlingen tijdens een lesopdracht. Dit gedrag is storend voor de atmosfeer in de klas en de andere leerlingen kunnen zo niet aan hun opdracht werken.</td>
<td>XX weigert om in een groepje te werken tijdens een lesopdracht. Dit gedrag is storend voor de atmosfeer in de klas en de andere leerlingen kunnen zich niet concentreren op hun activiteit.</td>
</tr>
<tr>
<td>2</td>
<td>verbal/physical aggression</td>
<td></td>
</tr>
<tr>
<td>EN</td>
<td>There is a conflict between two students. One of them, XX, starts to verbally challenge and physically threaten the other student with an aggressive attitude.</td>
<td>During a disagreement, XX starts to show aggressive behavior towards another student by physically intimidating and verbally attacking the other.</td>
</tr>
<tr>
<td>NL</td>
<td>Er is een conflict tussen twee leerlingen. Één van hen, XX, begint de ander verbaal uit te dagen en fysiek te bedreigen met een agressieve houding.</td>
<td>Tijdens een meningsverschil begint XX agressief gedrag tegen een andere leerling te vertonen, door de ander fysiek te intimeren en verbaal aan te vallen.</td>
</tr>
<tr>
<td>3</td>
<td>hindering others</td>
<td></td>
</tr>
</tbody>
</table>
### Table S3

*Continued*

<table>
<thead>
<tr>
<th>VIGNETTE</th>
<th>VERSION 1</th>
<th>VERSION 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN</td>
<td>During class, XX is chatting with a classmate who is sitting nearby. The classmate is getting distracted and is giggling about a funny comment.</td>
<td>During class, XX keeps talking to a classmate. The classmate is being interrupted by the chatting and is laughing with the student about a funny drawing.</td>
</tr>
<tr>
<td>NL</td>
<td>Tijdens de les is XX aan het praten met een klasgenoot die nabij zit. De klasgenoot raakt afgeleid en is aan het giechelen over een grappige opmerking.</td>
<td>Tijden de les blijft XX praten met een klasgenoot. De klasgenoot wordt gestoord door het gepraat en is aan het lachen met de leerling over een grappige tekening.</td>
</tr>
<tr>
<td>4</td>
<td><strong>disrespecting the teacher</strong></td>
<td></td>
</tr>
<tr>
<td>EN</td>
<td>XX starts being argumentative when you point out undesirable conduct. The student is talking back in a disrespectful manner.</td>
<td>After your comments to inappropriate behavior, XX starts disputing against you. The student’s conduct with the teacher is very rude.</td>
</tr>
<tr>
<td>NL</td>
<td>XX spreekt u tegen wanneer u de leerling wijst op ongewenst gedrag en begint op een respectloze manier terug te praten.</td>
<td>Na uw commentaar op ongepast gedrag van XX begint deze met u te redetwisten. De omgang van de leerling met u is erg bot.</td>
</tr>
<tr>
<td>5</td>
<td><strong>non-attentiveness/daydreaming/idleness/sleeping</strong></td>
<td></td>
</tr>
<tr>
<td>EN</td>
<td>XX is not paying attention to what you are saying. The student is daydreaming and does not listen to you.</td>
<td>XX is not actively involved in the lesson. The student is doodling on a notebook and does not pay attention to the course content.</td>
</tr>
<tr>
<td>NL</td>
<td>XX besteedt geen aandacht aan wat u zegt. De leerling is aan het dagdromen en luistert niet naar u.</td>
<td>XX is niet actief betrokken bij de les. De leerling is aan het schetsen in een notitieblok en besteedt geen aandacht aan de inhoud van de les.</td>
</tr>
<tr>
<td>6</td>
<td><strong>being out of seat</strong></td>
<td></td>
</tr>
<tr>
<td>EN</td>
<td>XX does not want to go back inside after the break is over. The student wants to keep on playing outside.</td>
<td>XX does not want to be in the classroom and insists wanting to go home. The student wants to play computer games and does not want to listen to the course content.</td>
</tr>
<tr>
<td>NL</td>
<td>XX wil niet terug naar binnen na de pauze. De leerling wil door blijven spelen buiten.</td>
<td>XX wil niet in het klaslokaal zijn en dringt erop aan naar huis te willen gaan. De leerling wil computerspelletjes spelen en wil niet luisteren naar de les.</td>
</tr>
</tbody>
</table>
**Exploratory Factor Analysis**

There are quite a number of correlations between the teacher interventions that are greater than .3, which suggests that factor analysis could be appropriate here (see Tables S3 and S4).

**Table S4**

*Correlations of the Teacher Interventions that are Averaged Across Scenarios: Ethnic Majority Target Group*

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Do nothing</th>
<th>Warn</th>
<th>Expel</th>
<th>Discuss</th>
<th>Contact parents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do nothing</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Warn</td>
<td>.080 (.335)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expel</td>
<td>-.064 (.438)</td>
<td>.409** (.00)</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discuss</td>
<td>-.146 (.077)</td>
<td>.062 (.455)</td>
<td>.178* (.03)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Contact parents</td>
<td>.014 (.863)</td>
<td>.256** (.002)</td>
<td>.309** (.00)</td>
<td>.403** (.00)</td>
<td>1</td>
</tr>
</tbody>
</table>

*Note.* *p < .05, **p < .01.

**Table S5**

*Correlations of the Behaviors that are Averaged Across Scenarios: Ethnic Minority Target Group*

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Do nothing</th>
<th>Warn</th>
<th>Expel</th>
<th>Discuss</th>
<th>Contact parents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do nothing</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Warn</td>
<td>.119 (.149)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expel</td>
<td>.125 (.131)</td>
<td>.363** (.00)</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discuss</td>
<td>-.151 (.068)</td>
<td>.044 (.594)</td>
<td>.151 (.068)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Contact parents</td>
<td>.022 (.79)</td>
<td>.238** (.004)</td>
<td>.340** (.00)</td>
<td>.359** (.00)</td>
<td>1</td>
</tr>
</tbody>
</table>

*Note.* *p < .05, **p < .01.

The value of Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) was .58 and .61 for the ethnic majority and ethnic minority target groups respectively, which are within acceptable limits for factor analysis. The Bartlett’s Test of Sphericity was significant for both target groups ($p < .01$).

Meeting the analysis requirements, we conducted a separate exploratory factor analysis for teacher interventions (averaged across scenarios) for both the ethnic majority and ethnic minority target groups. Two components were extracted for each group using principal component analysis (PCA), explaining 59.5% and 60% of variance for ethnic majority
and ethnic minority target groups respectively. The retention of a factor was decided on Kaiser’s eigenvalue greater than 1 criterion (Fabrigar et al., 1999), cumulative variance, and inspection of the scree plots. Factors were orthogonally rotated using Varimax rotation. Teacher interventions that load on the first factor (i.e., ‘warn’, ‘expel’, ‘contact parents’) suggest it represents interventions that are mostly punitive in nature, and the second factor (i.e., ‘do nothing”, ‘discuss’) suggests it represents interventions that are more neutral in nature (Table S5). We therefore refer to them as dismissive and tolerant respectively.

Table S6

Varimax Rotated Principal Component Matrix with Kaiser Normalization

<table>
<thead>
<tr>
<th>Teacher Intervention</th>
<th>Ethnic Majority Target Group Component</th>
<th>Ethnic Minority Target Group Component</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Do nothing</td>
<td>.196</td>
<td>-.697</td>
</tr>
<tr>
<td>Warn</td>
<td>.777</td>
<td>-.238</td>
</tr>
<tr>
<td>Expel</td>
<td>.747</td>
<td>.087</td>
</tr>
<tr>
<td>Discuss</td>
<td>.327</td>
<td>.737</td>
</tr>
<tr>
<td>Contact parents</td>
<td>.647</td>
<td>.395</td>
</tr>
</tbody>
</table>

*Rotation converged in 3 iterations.*
Appendix D

Supplementary Chapter 6

Comparing Teachers with Different Ethnic Identities

We investigated whether there were any differences between groups of teachers with different ethnic identities regarding the main variables in our model. A one-way MANOVA was performed with self-identified ethnic background of the teachers (only Dutch, Dutch and another, another) as the grouping variable, their perspective taking, multicultural attitudes, and culturally responsive teaching as the variables to be compared (Table S1). We did not find a statistically significant difference in these variables based on teachers’ ethnic backgrounds, $F(8, 204) = .611, p = .606$; Wilk’s $\Lambda = 0.940$, partial $\eta^2 = .03$ (see Table S1). Subsequently, participants that indicated another or an additional ethnic affiliation than Dutch were grouped together for easier interpretation of results.

Table S1

<table>
<thead>
<tr>
<th>MANOVA Results for Ethnic Minority Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>SS</strong></td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Perspective taking</td>
</tr>
<tr>
<td>Multicultural attitudes</td>
</tr>
<tr>
<td>CRT: Cultural sensitivity</td>
</tr>
<tr>
<td>CRT: Social sensitivity</td>
</tr>
</tbody>
</table>

Note. CRT = Culturally Responsive Teaching.

Item Reduction

Items that reflected teachers’ sensitivity to their students’ culture specific (e.g., “I use the cultural background of my students to make learning meaningful) and general needs -including both academic and social (e.g., “I adjust instructions to cater to the needs of my students”; “I help students establish positive relationships with their classmates”) were retained for further analyses. The items that were not representative of the Dutch educational context, that were too subject specific, were about the home life of the students, or were too similar to other items that are retained were excluded from further analyses. For instance, the item “I identify ways in which standardized tests can be prejudiced against culturally different students” does not apply to the Netherlands context as in the Netherlands, we have a nation-wide standardized test CITO, and individual teachers do not have any control over its content. Additionally, “I tell about the achievements of culturally different others in Math”, for example, is too subject specific to be a valid measure of an overall culturally responsive teaching practice.
Conceptually, we retained items that fell under two categories that we subsequently named 1) cultural sensitivity and 2) social sensitivity. In order to verify this factor structure, we performed a factor analysis with 2 forced factors as detailed below.

**Factor Analysis**

The value of Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) was .78, indicating that the strength of the relationships among items was high; and, the Bartlett’s Test of Sphericity was significant ($\chi^2 (190) = 644.521, p < 0.001$). The data hence met the assumptions of factor analysis.

**Table S2**

*Pattern Matrix Factor Loadings*

| CRT_1  | CRT_2  | CRT_3  | CRT_5  | CRT_7  | CRT_12 | CRT_13 | CRT_16 | CRT_19 | CRT_21 | CRT_26 | CRT_27 | CRT_28 | CRT_30 | CRT_31 | CRT_34 | CRT_35 | CRT_37 | CRT_38 | CRT_40 |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| -.054  | -.112  | -.023  | .652   | .016   | .505   | .712   | .592   | .478   | -.011  | .080   | .664   | .358   | .521   | .418   | .200   | .700   | .298   | .363   | .135   |
| .644   | .565   | .284   | -.021  | .406   | .239   | -.077  | .081   | -.041  | .634   | .463   | -.021  | .014   | -.072  | .198   | .397   | -.073  | .249   | .236   | .538   |

*Note.* CRT = Culturally Responsive Teaching.

The fit of a 2-factor model was examined using the Maximum Likelihood extraction method. An Oblimin rotation was carried out as factors were expected to be correlated. The model fitted the data well$^{29}$ with $\chi^2 (151) = 217.508, p < 0.001$. The first factor had an eigenvalue

$^{29}$ We first discovered the factor structure with an exploratory factor analysis ($\chi^2 (100) = 100.774, p = .459$); and, also examined a 3-factor solution ($\chi^2 (133) = 166.962, p = .025$). The 2-factor solution fits our data the best ($\chi^2 (151) = 217.508, p < 0.001$).
of 5.338 and accounted for 26.7% of the variance in the data. Factor two had an eigenvalue of 2.106 and accounted for further 10.6% of the variance. Factor loadings are presented in Table S1, and the retained and excluded items are presented in Tables S2 and S3 respectively.

Table S3
*Culturally Responsive Teaching Items that were Retained*

<table>
<thead>
<tr>
<th>Factor 1 items</th>
<th>Cultural Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRT_5</td>
<td>Identify aspects in which the school culture (for example, values, norms, and practices) differs from the home culture of my students.</td>
</tr>
<tr>
<td>CRT_12</td>
<td>Establish community between students when my class exists of students from various backgrounds.</td>
</tr>
<tr>
<td>CRT_13</td>
<td>Use the cultural background of my students to make learning meaningful.</td>
</tr>
<tr>
<td>CRT_16</td>
<td>Obtain information regarding the cultural background of my students.</td>
</tr>
<tr>
<td>CRT_19</td>
<td>Design a classroom environment with attributes that represent a variety of cultures.</td>
</tr>
<tr>
<td>CRT_27</td>
<td>Revise educational materials to improve its’ representation of cultural groups.</td>
</tr>
<tr>
<td>CRT_28</td>
<td>Critically study the curriculum in order to determining whether it does or does not strengthen negative cultural stereotypes.</td>
</tr>
<tr>
<td>CRT_30</td>
<td>Design tasks in the classroom in a way that helps improve the understanding of students studying Dutch.</td>
</tr>
<tr>
<td>CRT_31</td>
<td>Communicate with the parents of students studying Dutch about their child’s achievements.</td>
</tr>
<tr>
<td>CRT_35</td>
<td>Make use of examples that are relatable for students from culturally different backgrounds.</td>
</tr>
<tr>
<td>CRT_38</td>
<td>Make use of my students’ interests to make learning meaningful to them.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 2 items</th>
<th>Social Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRT_1</td>
<td>Adjust instructions to cater to the needs of my students.</td>
</tr>
<tr>
<td>CRT_2</td>
<td>Obtain information regarding the academic strengths of my students.</td>
</tr>
<tr>
<td>CRT_3</td>
<td>Assess whether my students rather work alone or in a group.</td>
</tr>
<tr>
<td>CRT_7</td>
<td>Judge my students’ learning using various kinds of tests.</td>
</tr>
<tr>
<td>CRT_21</td>
<td>Obtain information regarding my students’ academic weaknesses.</td>
</tr>
<tr>
<td>CRT_26</td>
<td>Help students establish positive relationships with their classmates.</td>
</tr>
<tr>
<td>CRT_34</td>
<td>Use a learning preference survey to obtain information on how my students prefer to learn.</td>
</tr>
<tr>
<td>CRT_37</td>
<td>Obtain information concerning my students’ academic interests.</td>
</tr>
<tr>
<td>CRT_40</td>
<td>Develop education according to my students’ developmental needs.</td>
</tr>
</tbody>
</table>

*Note. CRT = Culturally Responsive Teaching.*
### Table S4

**Culturally Responsive Teaching Items that were Excluded**

<table>
<thead>
<tr>
<th>Items</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRT_4</td>
<td>Assess whether my students are comfortable with competing with other students.</td>
</tr>
<tr>
<td>CRT_6</td>
<td>Implement strategies to minimize the effects of the mismatch between my students’ home culture and the school culture.</td>
</tr>
<tr>
<td>CRT_8</td>
<td>Obtain information regarding the home life of my students.</td>
</tr>
<tr>
<td>CRT_9</td>
<td>Establish a feeling of trust with my students.</td>
</tr>
<tr>
<td>CRT_10</td>
<td>Establish positive relationships between home and school.</td>
</tr>
<tr>
<td>CRT_11</td>
<td>Employ a variety of educational methods.</td>
</tr>
<tr>
<td>CRT_14</td>
<td>Use my students’ common knowledge to help them understand new information.</td>
</tr>
<tr>
<td>CRT_15</td>
<td>Identify how the way in which students communicate at home can differ from the school’s norms.</td>
</tr>
<tr>
<td>CRT_17</td>
<td>Teach students about their cultures’ contributions to science.</td>
</tr>
<tr>
<td>CRT_18</td>
<td>Greet students studying Dutch with a phrase from their mother tongue.</td>
</tr>
<tr>
<td>CRT_20</td>
<td>Establish a personal relationship with my students.</td>
</tr>
<tr>
<td>CRT_22</td>
<td>Praise students studying Dutch for their achievements, using a phrase in their mother tongue.</td>
</tr>
<tr>
<td>CRT_23</td>
<td>Identify ways in which standardized tests can be prejudiced against linguistically different students.</td>
</tr>
<tr>
<td>CRT_24</td>
<td>Communicate with parents regarding the progress of their child’s education.</td>
</tr>
<tr>
<td>CRT_25</td>
<td>Structure parent-teacher conferences in a way in which this meeting is not intimidating to parents.</td>
</tr>
<tr>
<td>CRT_29</td>
<td>Develop a lesson, which shows how other cultural groups have made use of mathematics.</td>
</tr>
<tr>
<td>CRT_33</td>
<td>Identify ways in which standardized tests can be prejudiced against culturally different students.</td>
</tr>
<tr>
<td>CRT_36</td>
<td>Explain new concepts using examples from my students’ daily lives.</td>
</tr>
<tr>
<td>CRT_39</td>
<td>Implement cooperative learning activities for students who prefer to work in groups.</td>
</tr>
</tbody>
</table>

*Note. CRT = Culturally Responsive Teaching.*
Funding and Author Contributions

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Author Contributions
Chapter 2 is based on:

Ceren S. Abacioglu developed the concept for this manuscript, with input by Adela-Maria Isvoranu and Sacha Epskamp. The data for this study was provided by Maykel Verkuyten and Jochem Thijs. Ceren S. Abacioglu, Adela-Maria Isvoranu, and Sacha Epskamp analyzed and interpreted the data. Ceren S. Abacioglu wrote the manuscript. All authors provided valuable comments and revisions and approved the final manuscript for submission.

Chapter 3 is based on:

Ceren S. Abacioglu developed the design for this manuscript, with input from all authors. Ceren S. Abacioglu and Marjolein Zee analyzed and interpreted the data. Ceren S. Abacioglu wrote the manuscript. All authors provided valuable comments and revisions and approved the final manuscript for submission.

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Ceren S. Abacioglu developed the design for this manuscript, with input from all authors. Ceren S. Abacioglu and Sacha Epskamp analyzed the data. Ceren S. Abacioglu interpreted the data and wrote the manuscript. All authors provided valuable comments and revisions and approved the final manuscript for submission.
Chapter 5 is based on:

Ceren Su Abacioglu, Monique Volman, and Agneta Fischer developed the design of this study and the concept for this manuscript. Ceren S. Abacioglu collected, analyzed, and interpreted the data with the help of Thomas Pronk. Ceren S. Abacioglu wrote the manuscript. All authors provided valuable comments and revisions and approved the final manuscript for submission.

Chapter 6 is based on:

Ceren Su Abacioglu developed the design of this study and collected, analyzed, and interpreted the data with input from all authors. Ceren S. Abacioglu wrote the manuscript. All authors provided valuable comments and revisions and approved the final manuscript for submission.

Chapter 7 is based on:
Abacioglu, C. S., Fischer, A., & Volman, M. (under review). Professional learning in multicultural education: What can we learn from the Australian context?

Ceren Su Abacioglu developed the concept for this manuscript, with input from all authors and Megan Watkins. The data for this study was obtained from Megan Watkins, who, together with Greg Noble, Kevin Dunn, and Garth Lean, collected the data as part of the Australian Research Council Linkage Project Rethinking Multiculturalism/Reassessing Multicultural Education (RMRME). Ceren S. Abacioglu analyzed the data with methodological guidance from Terrence Jorgensen and Sacha Epskamp. Ceren S. Abacioglu interpreted the data and wrote the manuscript. All authors, as well as Megan Watkins, provided valuable comments and revisions and approved the final manuscript for submission.
Summary

Current educational institutions are struggling to create environments in which all students experience equal levels of opportunities, representation, and belongingness (Huijnk & Andriessen, 2016). Interpersonal biases from peers and teachers, and structural barriers such as mainstream education that does not relate to minoritized students’ personal experiences and frames of reference (Stevens et al., 2019) seem to be at the core of this challenge. Among their many roles, teachers create guidelines for children’s social behavior (Ryan & Patrick, 2001), give explicit messages about their peer interactions, and ideally strive for equal representation of cultures and identities (Jennings & Greenberg, 2009). Teachers’ approach to diversity can influence students’ sense of relatedness (Furrer & Skinner, 2003), belonging to social groups (Osterman, 2000), and their motivation (Deci & Ryan, 1985).

One approach to diversity is multiculturalism, depicting an ideology, or a reform movement, in which differences are acknowledged and seen as a source of richness. Multicultural education offers a set of practices through which teachers can apply multiculturalism in their classrooms. It has been designed to improve both students’ intergroup relations and educational achievement through equal representation of cultural groups in curriculum and instruction, creating critical consciousness over social inequalities (Banks, 2004). While much of the extant quantitative research focusses on the role of school diversity policies (e.g., multiculturalism, colorblindness) on minoritized students’ school adjustment or intergroup relations, how teachers implement multicultural practices, and how these practices relate to students’ social and academic experiences are not well explored.

With a focus on Dutch primary school classrooms, the current dissertation tried to fill this gap by offering an analysis of 1) the relationship between teachers’ multiculturalism and student experiences, 2) which teachers are more likely to adopt multicultural practices, and 3) whether professional learning can motivate teachers to endorse a multicultural approach.

Across three studies, the first part of this dissertation focuses on multicultural practices that pertain to curriculum, teaching pedagogies, and classroom interactions, in relation to students’ peer relationships and their motivation (manifested as school engagement). Specifically, I focused on three of the five dimensions of multicultural education delineated by Banks (2004): i) content integration from a variety of cultures; reflecting the diversity of students in texts, histories, values, beliefs, and varying perspectives (Koshy, 2017); ii) prejudice reduction through modifying students’ attitudes with teaching methods, materials, and dialogue that actively counteract social biases (i.e., prejudice, stereotyping, discrimination) and improve positive intergroup relations; and iii) equity pedagogy through avoiding standardized, one-size-fits-all approaches to teaching and learning, and modifying teaching to include various teaching and assessment styles to facilitate the learning and academic achievement of all students.
Central to this part are the propositions of two influential psychological theories: i) in situations in which individuals come together on fairly equal terms (i.e., equal status), with the support of social and institutional authority figures, intergroup contact can help to reduce intergroup bias and improve interpersonal interactions (Intergroup Contact Theory; Allport, 1954; Pettigrew & Tropp, 2006); ii) improved interpersonal peer relationships can contribute to students’ feelings of relatedness – a basic psychological need of all students, and the fulfillment of this need can motivate students to engage in learning and the learning environment (i.e., student engagement; Self-Determination Theory; Deci & Ryan, 1985; Reeve, 2012). Chapters 2 to 4 support these propositions by demonstrating the positive relationship between a multicultural approach to diversity, peer relationships, and motivation. At the same time, we draw boundary conditions under which multicultural education is most likely to have success.

Chapter 2 charts reciprocal relationships between teachers’ prejudice reduction practices, students’ peer relationships, and students’ motivation, conceptualizing classrooms as complex systems. Through comparing the psychometric network structures of majority and minoritized groups, I identified mechanisms through which teachers’ multicultural approach can influence different groups of students. In both networks, the positive effect of prejudice reduction and of peer relationships on student motivation was very clear. Notably, peer relationships especially emerged as a central factor for minoritized students’ motivation.

Chapter 3 investigates the effect of prejudice reduction on students’ engagement, with teachers’ explicit multicultural attitudes and implicit attitudes towards ethnic minoritized groups as possible moderators to this relationship. The findings from this chapter further supported the positive influence of teachers’ prejudice reduction practices on students’ engagement, regardless of students’ ethnic backgrounds. This was, however, only the case for teachers who exhibited stronger positive multicultural attitudes than average. In all likelihood, these teachers not only talk about multiculturalism as an abstract ideal, but they are also able to lead by example.

Chapter 4 investigates the effects of the equity pedagogy, content integration, and prejudice reduction on students’ engagement, and their peer relationships as a mediator, in classrooms with high and low ethnic minoritized student concentrations. This chapter shows the positive effect of equity pedagogy. At the same time, a negative effect of content integration on peer relationships is found, and through these relationships on students’ engagement, in classrooms with a relatively small number of students with a minoritized background. In such classrooms the status differences between students are likely to be noticeable. Status differences may explain both the need for more equitable teaching pedagogies that combat inequality (i.e., equity pedagogy), and the negative effect of content integration, which highlights diversity. This is in line with earlier research (Steffens et al., 2017) that found negative effects of highlighting diversity without also accentuating the unity of cultural groups around shared values and psychological needs (Bokhorst-Heng, 2007).
Summary

classrooms characterized by relatively high number of students with a minoritized ethnic background, indeed, the mediation effects were not statistically significant, while equity pedagogy did have a direct positive effect on students’ engagement. Unlike in Chapters 2 and 3, in none of these intergroup contexts did I find a significant effect of prejudice reduction on students. Unfortunately, I did not measure teachers’ attitudes in Chapter 4. However, it is possible that the positive effect of prejudice reduction could only have been identified for teachers who held above average positive multicultural attitudes (as in Chapter 3).

In the second part of this dissertation, I focus on identifying and validating qualities that may predict whether teachers adopt a multicultural approach to diversity in their classrooms. These characteristics relate to how teachers interpret and act in social situations, such as their abilities to accurately understand emotional phenomena (i.e., emotional intelligence) and take perspective of the other (i.e., perspective taking), and their familiarity with and sensitivity to diversity (i.e., multicultural attitudes). Determining these teacher characteristics’ relationships to teachers’ multiculturalism is an important first step in shaping the content of future professional learning opportunities that aim to empower teachers for “teaching to and through cultural diversity” (Gay, 2013).

Chapter 5 inquires into teachers’ classroom management strategies with majority and minoritized group students. In this chapter, I tested whether teachers differed in their reported interventions towards minoritized students compared to majority group students for the same kind of misbehavior that were described in short vignettes. I did not find differences in teachers’ reports of interventions to misbehaviors carried out by students with or without a migrant background. Notably, however, teachers who held more positive multicultural attitudes reported significantly more tolerant than dismissive intervention strategies towards students, regardless of their ethnic backgrounds.

In Chapter 6, I sought quantitative evidence in support of multicultural attitudes and perspective taking abilities as important factors in multicultural curricular and instructional practices. Our results indicated that both teacher characteristics predicted practices that require willingness, effort, and ability to understand individual differences in the cultural backgrounds of their students. These characteristics were also found to predict practices in catering the students’ social and academic needs that are not necessarily related to cultural background (e.g., understanding academic strengths and weaknesses of students, promoting positive relationships with classmates).

Together, findings from Chapters 5 and 6 showed that teachers who are more mindful of their own biases and cultural frames of reference, and who are comfortable with and sensitive to cultural pluralism (i.e., multicultural attitudes) are, in general, more understanding of their students and their behaviors during daily interactions, regardless of their ethnic backgrounds. Together with teachers’ abilities to take other people’s perspectives (i.e., perspective taking), these multicultural attitudes seem to also support teachers’ attempts
to understand differences in their students’ needs and effectively navigate through these differences in their curriculum and instruction.

In the third part of the dissertation, Chapter 7, I investigate whether teachers in Australia who have participated in professional learning in multicultural education differed in their approach to diversity, as reflected in their attitudes and beliefs, from teachers who did not have such professional learning. Two types of multicultural professional learning opportunities for teachers were distinguished: i) professional learning in **multicultural education** (ME) and ii) professional learning in teaching **English as a Second Language** (ESL). I examined the effects of the two types of professional learning in three time points, namely during pre-service training, in-service professional development, and as a postgraduate qualification. Our results indicated that the most effective time to receive professional learning is in during in-service years. In general, compared to teachers who did not receive any professional learning, teachers who received professional learning in ME, but also in ESL were found to be more likely to believe in the effectiveness of multicultural strategies in fostering cultural inclusiveness and recognize providing equitable chances for all students as an important goal of multicultural education. In addition, teachers who followed professional learning in ESL were less likely to support monoculturalism (as opposed to multiculturalism), compared to the teachers who did not receive any training. Having received professional learning in ME, however, did not have such significant effect on teachers’ monocultural attitudes. These results signal that while learning about multicultural strategies can be an effective tool to change teachers’ beliefs around the goals and effectiveness of these strategies, it may not be enough to change teachers’ general multicultural attitudes. These findings may be explained by the extensiveness of Australian ESL programs, in which teachers have ample opportunities to engage in multicultural strategies, compared to sporadic professional learning in ME (NSW Department of Education, 2018).

In summary, in attempting to understand the multiple elements in a multicultural approach and its effects on students, I consider classrooms as complex systems and investigate different dimensions of multicultural education. I connected important teacher qualities to the use of a multicultural approach to diversity and established the possible positive effect of professional learning on improving these teacher qualities. Grounded on the complex systems approach, I believe that the educational experiences of students should not be considered in isolation from each other. Our findings indeed illustrate how intergroup contexts can determine classroom experiences and the effects of different dimensions of multicultural education on students (Chapter 4). Considering the influence of teachers on the learning environment of their students, and given the different dimensions of multicultural education, I have illustrated that many effects are context dependent. There is a need to further examine the effects of multicultural education on students’ motivation and relational needs. Finally, it is important to know in what ways we can best empower teachers to effectively implement multicultural practices in response to their diverse environments.
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Scholen slagen er niet goed in leeromgevingen te creëren waarin alle leerlingen gelijke kansen hebben, en zich gezien en thuis voelen (Huijnk & Andriessen, 2016). Vooroordelen van medeleerlingen en leraren, en structurele barrières zoals een curriculum dat niet aansluit bij de persoonlijke ervaringen en referentiekaders van leerlingen uit minderheidsgroepen (Stevens et al., 2019) lijken de belangrijkste problemen. Leraren geven in de klas aan wat wenselijk gedrag is (Ryan & Patrick, 2001), geven expliciete boodschappen over interacties met leeftijdgenoten, en streven idealiter naar zichtbaarheid van verschillende culturen en identiteiten (Jennings & Greenberg, 2009). De manier waarop leraren diversiteit benaderen kan van invloed zijn op de mate waarin leerlingen zich verbonden (Furrer & Skinner, 2003) en thuis voelen (Osterman, 2000), en op hun motivatie (Deci & Ryan, 1985).

Multiculturalisme is een benadering van diversiteit, een ideologie of hervormingsbeweging waarin verschillen worden erkend en gezien worden als een rijke bron. Multicultureel onderwijs verwijst naar een reeks praktijken waarmee leraren multiculturalisme in hun klas kunnen vormgeven. Het is bedoeld om zowel de groepsrelaties als de onderwijsprestaties van leerlingen te verbeteren door een gelijkere representatie van verschillende culturele groepen in het curriculum leerplan en de didactiek, en door het creëren van een kritisch bewustzijn van sociale ongelijkheid (Banks, 2004). Veel bestaand kwantitatief onderzoek richt zich op de relatie tussen hoe scholen omgaan met diversiteit (bijv. multiculturalisme, kleurenblindheid) en de positie of relaties van leerlingen met een migratieachtergrond. Er is echter weinig bekend over hoe leraren multiculturalere praktijken implementeren, en wat deze praktijken betekenen voor de sociale en leerervaringen van leerlingen. Met een focus op Nederlandse basisschoolklassen, probeert dit proefschrift deze leemte op te vullen door een analyse te bieden van 1) de relatie tussen het multiculturalisme van leraren en de ervaringen van hun leerlingen, 2) welke leraren meer geneigd zijn om multiculturalere praktijken toe te passen, en 3) of professioneel leren leraren kan motiveren tot een multiculturalere benadering.

Het eerste deel van dit proefschrift richt zich aan de hand van drie studies op multiculturalere praktijken van Nederlandse basisschoolleraren die betrekking hebben op het curriculum, de pedagogisch-didactische aanpak en interacties in de klas, en hoe deze praktijken gerelateerd zijn aan de onderlinge relaties tussen leerlingen en hun motivatie (zoals die tot uiting komt in schoolbetrokkenheid). Meer specifiek richt ik me op drie van de vijf dimensies van multiculturalere onderwijs die door Banks (2004) zijn onderscheiden: i) inhoudsintegratie waarbij de diversiteit van leerlingen in het curriculum wordt weerspiegeld door de integratie van teksten, geschiedenis, waarden, overtuigingen en perspectieven vanuit verschillende culturen (Koshy, 2017); ii) vermindering van vooroordelen door de houding van leerlingen te veranderen met behulp van onderwijsmethoden, lesmaterialen en dialoog die actief sociale vooroordelen, stereotypering en discriminatie tegengaan, en
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zo negatieve relaties tussen groepen verminderen en positieve relaties bevorderen; en iii) equity pedagogy: het vermijden van gestandaardiseerde, one-size-fits-all benaderingen van onderwijzen en leren, door verschillende onderwijs- en beoordelingsstijlen een plaats te geven die het leren en de leerpunten van alle leerlingen ondersteunen.

Centraal in dit deel staan de uitgangspunten van twee invloedrijke psychologische theorieën: i) in situaties waarin individuen een redelijk gelijke status hebben, met de steun van sociale en institutionele gezagsdragers, kan contact tussen groepen helpen om vooroordelen tussen groepen te verminderen en interpersoonlijke interacties te verbeteren (Intergroup Contact Theory; Allport, 1954; Pettigrew & Tropp, 2006); ii) goede interpersoonlijke relaties met medestudenten kunnen bijdragen aan een gevoel van verbondenheid bij leerlingen - een psychologische basisbehoefte van alle leerlingen, en de vervulling van deze behoefte kan leerlingen motiveren om zich in te zetten voor leren op school (i.e., studentbetrokkenheid; Zelfdeterminatietheorie; Deci & Ryan, 1985; Reeve, 2012). De hoofdstukken 2 tot en met 4 ondersteunen deze uitgangspunten, doordat ze een positieve relatie aantonen tussen een multiculturele benadering, relaties met medeleerlingen en motivatie voor leren; tegelijkertijd schetsen ze randvoorwaarden waaronder multicultureel onderwijs werkt.

Hoofdstuk 2 brengt de relaties in kaart tussen de mate waarin leraren vooroordelen bestrijden, en de onderlinge relaties tussen en de motivatie van leerlingen. Hierbij worden klassen geconceptualiseerd als complexe systemen. Door de psychometrische netwerkstructuren van meerderheids- en minderheidsgroepen te vergelijken, identificeerde ik mechanismen waardoor de multiculturele benadering van leraren verschillende groepen leerlingen kan beïnvloeden. In beide netwerken was het positieve effect van het verminderen van vooroordelen en van goede relaties met leeftijdgenoten op de motivatie van leerlingen zeer duidelijk. Maat met name voor de motivatie van leerlingen uit minderheidsgroepen bleek de relaties met medeleerlingen een centrale factor.

Hoofdstuk 3 onderzoekt het effect van het verminderen van vooroordelen op de betrokkenheid van leerlingen, met expliciete multiculturele attitudes van leraren en impliciete attitudes ten opzichte van gemarginaliseerde etnische groepen als mogelijke moderatoren voor deze relatie. De bevindingen uit dit hoofdstuk tonen dat het verminderen van vooroordelen door leraren positieve invloed heeft op de betrokkenheid van leerlingen, ongeacht de etnische achtergrond van de leerlingen. Dit was echter alleen het geval bij leraren die een bovengemiddeld positieve multiculturele houding vertoonden. Naar alle waarschijnlijkheid praten deze leraren niet alleen over multiculturalisme als een abstract ideaal, maar geven zij ook het goede voorbeeld.

Hoofdstuk 4 onderzoekt de effecten van equity pedagogy, content integration en prejudice reduction op de betrokkenheid van leerlingen, en hun relaties met medeleerlingen als mediator, in klasen met hoge en lage concentraties leerlingen uit gemarginaliseerde etnische groepen. Dit hoofdstuk laat een positief effect zien van equity pedagogy. Tegelijkertijd is er een negatief effect van content integratie op de relaties tussen leerlingen,
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en via deze relaties ook op de betrokkenheid van leerlingen in klassen waar het aantal leerlingen uit minderheidsgroepen relatief klein is. In zulke klassen zijn de statusverschillen tussen leerlingen waarschijnlijk merkbaarder. Statusverschillen tussen groepen leerlingen in de klas kunnen een verklaring zijn voor zowel de noodzaak om ongelijkheid te bestrijden door middel van equity pedagogy, als voor het negatieve effect van inhoudsintegratie, een aanpak die diversiteit benadrukt. Dit is in lijn met eerder onderzoek (Steffens et al., 2017) dat negatieve effecten liet zien van het benadrukken van diversiteit zonder ook te benadrukken dat culturele groepen gedeelde waarden en psychologische behoeften hebben (Bokhorst-Heng, 2007). In klassen met een min of meer evenwichtige leerlingsamenstelling, waren de mediatieeffecten inderdaad niet statistisch significant, terwijl equity pedagogy wel een direct positief effect had op de betrokkenheid van leerlingen. Anders dan in hoofdstuk 2 en 3 vond ik in geen van beide situaties een significant effect van de reductie van vooroordelen op leerlingen. Helaas heb ik in hoofdstuk 4 de attitudes van docenten niet gemeten. Het is echter mogelijk dat het positieve effect van vooroordelenreductie alleen geldt voor docenten die een bovengemiddeld positieve multiculturele attitude hebben (zoals in hoofdstuk 3).

In het tweede deel van dit proefschrift richt ik me op kwaliteiten die kunnen voorspellen of basisschoolleraren in hun klas een multiculturele benadering hanteren. Ik kijk naar kwaliteiten die betrekking hebben op hoe leraren sociale situaties interpreteren en er in handelen, zoals hun vermogen om emotionele verschijnselen goed in te schatten (i.e., emotionele intelligentie) en het perspectief van de ander in te nemen (i.e., perspectief nemen), en hun vertrouwdheid met en gevoeligheid voor diversiteit (i.e., multiculturele attitudes). Het bepalen van de relaties tussen deze leraarkenmerken en de mate waarin et onderwijs dat leraren geven multicultureel is, is een belangrijke eerste stap in het vormgeven van toekomstige professionele leermogelijkheden die erop gericht zijn leraren te bekwamen voor “lesgeven voor en door culturele diversiteit” (Gay, 2013).

Hoofdstuk 5 onderzoekt de klassenmanagement strategieën van leraren ten aanzien van leerlingen uit de meerderheids- en de minderheidsgroep. Leraren werd gevraagd om, naar aanleiding van korte vignetten waarin verschillende vormen van onwenselijk gedrag van leerlingen werden beschreven, aan te geven hoe ze zouden interveniëren. Ik onderzocht of de interventies ten aanzien van leerlingen met een minderheidsachtergrond en die uit de meerderheidsgroep verschillen. Ik vond geen verschillen in wat leraren rapporteerden over interventies bij onwenselijk gedrag van leerlingen met of zonder een migratieachtergrond. Opmerkelijk was echter dat leraren met een positievere multiculturele houding significant meer tolerantie dan afwijzende interventiestrategieën rapporteerden ten opzichte van leerlingen, ongeacht hun etnische achtergrond.

In hoofdstuk 6 zocht ik naar kwantitatief bewijs voor de invloed van multiculturele attitudes en het vermogen om perspectief te nemen op multiculturele pedagogisch-didactische praktijken. Beide leraarkenmerken bleken te voorspellen in welke mate leraren gebruik maken van pedagogisch-didactische praktijken die vragen om inzicht in verschillen
tussen leerlingen die te maken hebben met culturele achtergronden. Deze kenmerken bleken ook te voorspellen in welke mate leraren gebruik maken van pedagogisch-didactische praktijken die tegemoet komen aan sociale en academische behoeften van leerlingen die niet noodzakelijk samenhangen met culturele achtergrond (bijv. aandacht voor sterke en zwakke punten van leerlingen, bevordering van positieve relaties met klasgenoten).

Samen tonen de bevindingen uit hoofdstuk 5 en 6 aan dat leraren die zich meer bewust zijn van hun eigen vooroordelen en culturele referentiekaders, en die zich op hun gemak voelen bij en gevoelig zijn voor cultureel pluralisme (d.w.z. multiculturele attitudes), in het algemeen meer begrip hebben voor hun leerlingen en hun gedrag tijdens dagelijkse interacties, ongeacht hun etnische achtergrond. Samen met het vermogen van leraren om het perspectief van anderen in te nemen, lijken deze multiculturele attitudes leraren ook te helpen om verschillen in de behoeften van hun leerlingen te begrijpen en daar in hun lessen effectief bij aan te sluiten.

In het derde deel van het proefschrift, Hoofdstuk 7, onderzocht ik of Australische leraren die hebben deelgenomen aan professioneel leren over multicultureel onderwijs en leraren die niet aan dergelijk professioneel leren hebben deelgenomen, verschillen in hun benadering van diversiteit. Er werden twee typen van multicultureel professioneel leren voor leraren onderscheiden: i) professioneel leren over multicultureel onderwijs (ME) en ii) professioneel leren over het onderwijzen van Engels als een Tweede Taal (ESL). Ik onderzocht de effecten van de twee soorten professioneel leren op drie verschillende momenten in de loopbanen van leraren, namelijk tijdens de lerarenopleiding, tijdens de beroepsuitoefening (nascholing), en als postdoctorale kwalificatie. Onze resultaten laten zien dat het meest effectieve moment voor professioneel te leren op dit gebied zich voordeed tijdens de beroepsuitoefening. Leraren die deelnamen aan professionalisering op het gebied van ME of ESL, geloofden, in vergelijking met andere leraren, meer in de effectiviteit van multiculturele strategieën voor het bevorderen van culturele inclusie en zagen het bieden van gelijke kansen voor alle leerlingen meer als een belangrijk doel van multicultureel onderwijs. Bovendien waren leraren die professionalisering in ESL hadden gevolgd minder geneigd om monoculturalisme (in tegenstelling tot multiculturalisme) te steunen, in vergelijking met leraren die niet aan professioneel leren hadden deelgenomen. Professioneel leren in ME had echter geen significant effect op de monoculturele attitudes van leraren. Deze resultaten wijzen erop dat, hoewel het leren over multiculturele strategieën een effectief middel kan zijn om de opvattingen van leraren over de doelen en effectiviteit van deze strategieën te veranderen, het misschien niet genoeg is om de algemene multiculturele attitudes van leraren te veranderen. Deze bevindingen kunnen wellicht worden verklaard door de uitgebreidheid van ESL-programma’s in Australië waarin leraren ruimschoots de gelegenheid hebben om zich bezig te houden met en te reflecteren op multiculturele strategieën, in vergelijking met het meer sporadische professionele leren over multicultureel onderwijs (ME) (NSW Department of Education, 2018).
Nederlandse Samenvatting

Samenvattend, in een poging om de vele elementen van een multiculturele benadering en de effecten daarvan op leerlingen te begrijpen, heb ik klassen als complexe systemen opgevat en onderzocht ik verschillende dimensies van multicultureel onderwijs. Ik heb belangrijke leraarkwaliteiten gerelateerd aan het gebruikend van een multiculturele benadering van diversiteit in de klas en een positief effect van professioneel leren op het verbeteren van deze kwaliteiten vast te stellen. Op basis van de complexe systeembenadering geloof ik dat de onderwijservaringen van leerlingen niet los van elkaar moeten worden gezien. Mijn bevindingen illustreren hoe groepscontexten ervaringen in de klas en de effecten van verschillende dimensies van multicultureel onderwijs op leerlingen kunnen bepalen (Hoofdstuk 4). In toekomstig onderzoek, moeten de effecten van multicultureel onderwijs op de motivatie en relationele behoeften van leerlingen verder worden onderzocht. Ten slotte is het ook belangrijk te weten op welke manieren we leerkrachten het best in staat kunnen stellen om multiculturele praktijken effectief toe te passen als antwoord op hun diverse omgevingen.
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Antecedents, Implications, and Professional Development of MULTICULTURALISM

Ceren Su Abacioglu