Towards a Resolution of Ethnic Comparative Research with Minority and Majority Adolescents

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Contents

Abstract

Developmental contexts are becoming increasingly culturally diverse. Because of changing minority-majority dynamics and an increased awareness of inequities rooted in racially stratified societies, the study of developmental processes in different ethnic groups of adolescents has become a challenge. How can research shift the focus from *describing* to *explaining* group differences based on psychological and social mechanisms? How can researchers accurately investigate differences and similarities between groups without running the risk of perpetuating a deficit-oriented perspective? An ethnic comparative perspective, although often criticised (e.g., promotes power imbalance between ethnic groups, encourages 'otherness'), can complement other research methods to explain immigrant youth's adjustment in different contexts, identify structural barriers to a positive adaptation and, determine underlying variables (e.g., socioeconomic status, opportunity differentials) that create differences that may otherwise be attributed to culture. This dissertation focuses on comparative approaches with ethnic minority and majority youth and shows how these can be utilised to understand developmental processes in various ethnic groups. I present three alternative ways to do this, together with empirical evidence based on cultural variance between minority (i.e., adolescents themselves or at least one parent born outside Germany; shared experience of belonging to a minority group) and majority (i.e., no migration history in their own or their parents' generation; shared experience of belonging to a majority group) groups. In the first study, I 'explain away' minority–majority differences in developmental trajectories of life satisfaction and academic self-efficacy. This approach is performed with the particular research question of how specific features of the home learning environment (e.g., learning conditions at home and parental involvement) can improve psychological and school adjustment. It also shows that student–teacher communication and family support are important factors that can improve home learning in both groups. As explaining away ethnic disparities may not always be possible, in the second study I compare minority and majority student–teacher dyads by drawing on multicultural education theory and add group–specific predictors. I investigate how students and their classroom teachers perceive the teacher–student relationship quality and which predictors at the student-level and classroom-level explain differences in students' and teachers' perceptions. The third study adopts a person-oriented approach, as an opportunity to study youth from different ethnic groups (i.e., ethnic German diaspora adolescents who migrated from the former Soviet Union to Germany, Russian Jews who migrated from the former Soviet Union to Israel, and

majority adolescents in Germany) without an ethnic comparative mindset. This study uncovers subgroups of adolescents based on their perceived social support trajectories and identifies developmental and acculturation-related variables as predictors of subgroup membership. I conclude with a debate on the ethnic comparative approach, as well as other approaches (e.g., intersectional research) that may ensure a more comprehensive picture of youth adjustment in highly diverse contexts.

Keywords: ethnic minority adolescents; ethnic comparative research; positive development

Zusammenfassung

Die Entwicklungskontexte der Kinder und Jugendlichen werden zunehmend kulturell vielfältiger. Infolge der sich verändernden Minderheit-Mehrheit-Dynamiken und des gestiegenen Bewusstseins für sozialer Ungleichheit, die auf segregierte Gesellschaften zurückzuführen sind, ist die Untersuchung von Entwicklungsprozessen von Jugendlichen mit und ohne Migrationsgeschichte zu einer Herausforderung geworden. Wie kann es der Forschung gelingen, einen Ansatz zu entwickeln, der nicht nur psychologische und soziale Mechanismen innerhalb der unterschiedlichen Gruppen *beschreibt,* sondern auch *erklären* kann? Wie kann die Wissenschaft Gemeinsamkeiten und Unterschiede zwischen den Gruppen untersuchen, ohne Gefahr zu laufen, eine defizitorientierte Sichtweise einzunehmen? Ethnisch vergleichende Ansätze können, auch wenn sie in vielen Fällen kritisch gesehen werden (z.B. Hervorhebung des Ungleichgewichts zwischen ethnischen Gruppen, Betonung des "Andersseins"), andere Forschungsmethoden ergänzen und dadurch Erklärungsansätze von Anpassungsprozessen der Jugendlichen mit Migrationsgeschichte in verschiedenen Kontexten liefern. Zudem können sie strukturelle Barrieren identifizieren, die eine positive Anpassung dieser Jugendlichen verhindern und Variablen (z. B. sozioökonomischer Status, Chancenungleichheiten) beschreiben, die andernfalls kulturellen Hintergründen zugeschrieben (werden) würden. Diese Arbeit konzentriert sich auf Ansätze, die Jugendliche mit und ohne Migrationsgeschichte vergleichen und demonstriert, wie diese genutzt werden können, um Entwicklungsprozesse in verschiedenen ethnischen Gruppen zu verstehen. Es werden drei Möglichkeiten aufgezeigt, zusammen mit empirischen Belegen, die auf kultureller Varianz zwischen Jugendlichen mit (d. h. Jugendliche, die selbst oder mindestens ein Elternteil außerhalb Deutschlands geboren sind) und ohne Migrationsgeschichte (d.h. keine Migrationsgeschichte in der eigenen oder der Generation ihrer Eltern) basieren. In der ersten Studie werden die Unterschiede zwischen Jugendliche mit und ohne Migrationsgeschichte in den Entwicklungsverläufen von Lebenszufriedenheit und akademischer Selbstwirksamkeit „wegerklärt“. Dieser Ansatz wird mit der Forschungsfrage durchgeführt, wie spezifische Merkmale der häuslichen Lernumgebung (z. B. Lernbedingungen zu Hause und elterliches Engagement) die psychologische und schulische Anpassung verbessern können. Die Ergebnisse zeigen, dass die Kommunikation zwischen Schüler:innen und Lehrkräfte und die familiäre Unterstützung wichtige Faktoren sind, die das Lernen zu Hause in beiden Gruppen verbessern können. Da es nicht immer möglich ist,

ethnische Unterschiede „wegzuerklären“, werden in der zweiten Studie basierend auf der Theorie der multikulturellen Bildung Schüler-Lehrkraft-Dyaden von Jugendlichen mit und ohne Migrationsgeschichte verglichen und gruppenspezifische Prädiktoren untersucht. Es wird der Frage nachgegangen, wie Schüler:innen und ihre Klassenleitungen die Qualität der Lehrkraft-Schüler-Beziehung wahrnehmen und welche Prädiktoren auf Schüler- und Klassenebene die Unterschiede in den Wahrnehmungen der Beziehungsqualität erklären können. In der dritten Studie wird ein personenorientierter Ansatz gewählt, der die Möglichkeit bietet, die Anpassung von Jugendlichen verschiedener ethnischer Gruppen (d.h. deutschstämmige Diaspora-Jugendliche, die aus der ehemaligen Sowjetunion nach Deutschland eingewandert sind, russische Juden, die aus der ehemaligen Sowjetunion nach Israel eingewandert sind, und Jugendliche ohne Migrationshintergrund in Deutschland) ohne eine ethnisch vergleichende Perspektive anzunehmen. In dieser Studie werden Untergruppen von Jugendlichen anhand ihrer wahrgenommenen sozialen Unterstützung aufgedeckt und entwicklungs- und akkulturationsbezogene Variablen als Prädiktoren für die Zugehörigkeit zu Untergruppen identifiziert. In der finalen Diskussion wird auf den ethnisch vergleichenden Ansatz sowie auf andere Ansätze (z. B. intersektionale Forschung) eingegangen, die ein umfassenderes Bild der Anpassung von Jugendlichen in sehr heterogenen Kontexten abbilden können.

Stichworte: Jugendliche mit Migrationsgeschichte; ethnisch vergleichende Forschung; positive Entwicklung

1. Introduction

The population of young people worldwide is becoming increasingly culturally diverse. In the United States, the multiracial population under age 18 changed from 5.6% in 2010 to 15.1% in 2020 (Jones et al., 2021), whereas in Europe more than one-quarter of adolescents now have a migration history (European Strategy and Policy Analysis System, 2018). The reasons for migration have diversified: the climate crisis, constrictive political regimes, armed conflicts, and limited living opportunities, to name a few. As a result, in big cities, such as New York, Toronto, Amsterdam, or Berlin, the diversification of ethnic cultures has changed in such a way that there is no longer a majority group, but a multitude of ethnic groups (Crul, 2015). Schools are constantly preparing to teach culturally diverse students (Rowan et al., 2021), and the heterogeneity in heritage countries is expanding from two or three large ethnic minority groups to about 80 or more different ethnicities among the student body (Gyberg et al., 2021; Schachner et al., 2021). Compared with previous generations, children and adolescents today may perceive this high diversification of experiences as a given. However, regardless of the numerical progress of ethnic minority individuals, there are still significant educational disparities between ethnic minority and majority youth: Compared with ethnic majority adolescents, ethnic minority adolescents are more likely to leave school (Baysu & Phalet, 2012; Reisel & Brekke, 2010), are exposed to ethnic-racial discrimination and peer victimisation in schools (Seaton et al., 2012), report lower life satisfaction and academic self-efficacy (Bondy et al., 2017; Tang, 2019) and experience increasingly negative trajectories of teacher–student relationship quality (Baysu et al., 2021). At the same time, ethnic minority adolescents may develop higher levels of resilience than majority adolescents because they face additional migration-related demands (e.g., learning a new language; Marks et al., 2020). Researchers must find ways to empirically investigate which psychological mechanisms are able to explain these disparities in order to better understand developmental processes among diverse youth and to create inclusive environments. For instance, processes such as school belonging and cross-group friendships apply to all children and adolescents, but ethnic minority and majority groups may take advantage of different strategies to manage these developmental tasks. Therefore, despite the within-group differences, when studying developmental outcomes, comparisons

between similar groups of adolescents (e.g., majority–minority or minority–minority comparisons) are necessary to explain adjustment in different contexts, to identify structural barriers to positive adaptation and to determine underlying variables (e.g., socioeconomic status [SES], opportunity differentials) that create differences, which may otherwise and erroneously be attributed to culture (Heine, 2020; Syed, 2020).

Various studies have highlighted the value of comparative research for various outcomes. Comparisons may be of particular importance to improving school climate, where a significant part of youth's academic and psychosocial development takes place. For instance, a Dutch comparative study on ethnic minority and majority groups showed similarities between groups in that all students who perceived less rejection from their classmates reported more classroom identification 5 months later. At the same time, differences were found between groups in that the teacher–student relationship was more important for ethnic minority than for ethnic majority students. Furthermore, lower levels of conflict in the relationship with their teacher predicted more classroom identification for minority than for majority students (Thijs et al., 2019). Without uncovering these differences, school practitioners will not be able to fully respond to specific students' needs. Another study on ethnic minority and majority adolescents from Italy investigated how the diversity school climate influences intergroup contact. Findings showed that perceived equal treatment from teachers (and not perceived support for contact and cooperation) predicted an increase in positive intergroup contact and a decrease in negative intergroup contact over time (three time points, 6-month interval) for both minority and majority youth (Karataş et al., 2022). Therefore, the same cultural diversity approaches work for all adolescents, which emphasizes that contextual factors have similar effects on minority and majority adolescents' outcomes. With regard to another important developmental task during adolescence, building friendships, a three-wave study compared two minority groups in two different contexts: (1) Russian Jewish adolescents living in Israel and (2) ethnic German diaspora adolescents who returned to Germany from the former Soviet Union. Overall, the results showed more similarities than differences between the groups. Although ethnic German adolescents reported a higher decrease in friendships with same-ethnicity peers than Russian Jewish adolescents in Israel, intra-ethnic orientations and language use predicted friendships with same-ethnicity peers among both groups (Titzmann et al., 2012). Taken together, minority adolescents make use of the same mechanisms to build new friendships, but specific contexts may exert a different influence on their friendship networks.

Studies on minority-minority comparisons or with multiple minority groups are of value to better understand how each minority group may adapt across countries or, to capture the high variance within minority groups in terms of SES, education or acculturation orientations. This dissertation, however, will focus particularly on minority–majority comparisons in order to address the deficit thinking discourse about minority youth and present more knowledgeable ways to understand positive development during adolescence.

There are, however, some limitations regarding comparative studies with minority and majority youth. The first and main criticism is that the minority–majority dichotomy sustains the cultural deviance model because the minority group is often portrayed as inferior to the majority group or as lacking qualities, skills and capital (Cauce et al., 1998). If minority adolescents score lower than the majority adolescents on an outcome and this difference is attributed to their ethnic origins, then minority students' adaptation is seen as deficient (Arellano, 2022). Second, the minority–majority comparison strengthens boundaries and social hierarchies and may therefore contribute to sustaining a system of power in which one group (majority) has power over other groups (minority). Third, it encourages 'otherness' by separating ethnic minority groups from the majority group. In this case, the label 'minority' is perceived in the same way as the label 'foreigner' or 'student with a migration background' (Moffitt & Juang, 2019). Nonetheless, deciding against comparative approaches because of these limitations may be just as misleading as perpetuating them. A lack of knowledge is neither gainful nor constructive for future research. The cultural developmental psychologist Moin Syed stated that '*the real danger in comparative studies is ignorance, and not the comparison, per se*' (2020, p. 7). This suggests that researchers must be fully aware of the theory and assumptions they promote in their work and take conscious action to use innovative methods that are able to explain group differences and similarities if they want to advance positive developmental research on diversity. Therefore, avoiding ethnic comparative research per se may not be beneficial. Instead, studies based on comparisons must shift away from a *deficit perspective*, whereby only mean differences are presented, or where negative differences are attributed to ethnicity, towards a more positive, *resource-oriented perspective*, where the main goal is the identification of independent variables that create and explain disparities between ethnic groups (Marks et al., 2020; Heine, 2020).

In this dissertation, I aim to unfold the minority–majority dichotomy by using approaches that may explain the similarities and differences between ethnic minority and majority adolescents. At the same time, in order to promote a more inclusive and resource-oriented perspective on research with ethnic minority groups I included positive

developmental outcomes in all three studies. The studies highlight three alternative ways to study developmental processes during adolescence based on cultural variance between ethnic groups. In the first study, I 'explain away' minority–majority differences in developmental trajectories of life satisfaction and academic self-efficacy. This approach is performed with the particular research question of how specific features of the home learning environment (e.g., learning conditions at home and parental involvement) can improve psychological and school adjustment. Moreover, I investigate important factors able to improve the home learning environment in both groups (e.g., student–teacher communication, family climate). This study shows that there are some disparities between groups that may be explained by familial-related and school-related factors alike. In the second study, I take a step further and focus on school-related factors. I examine how the teacher–student relationship can be improved for ethnic minority and majority students and their classroom teachers. I investigate specific student-level and classroom-level predictors related to multicultural education theory that explain the mean differences found between students and teachers and between ethnic minority and majority groups. This comparison uncovers possible targets of intervention to improve relationship quality in diverse classrooms. In the third study, I examine subgroups of social support trajectories by adopting a person-oriented approach. Thus, the focus in this study is on groups built on behavioural patterns (i.e., social support trajectories) and not ethnic group membership. The social support trajectories reflect the variation between adolescents from different ethnic groups (i.e., ethnic German diaspora adolescents in Germany, Russian Jews in Israel, and majority adolescents in Germany). To understand the different trajectories, I include both developmental and acculturation-related variables that explain the variation between adolescents. Guided by a resource-oriented mindset, all three studies address similarities and differences between ethnic minority and majority groups in innovative ways and promote positive youth development.

2. The Minority–Majority Dichotomy

Ethnicity refers to 'the social group a person belongs to, and either identifies with or is identified with by others, as a result of a mix of cultural and other factors including language, diet, religion, ancestry, and physical features' (Bhopal, 2004, p. 442). Ethnicity can, therefore, be seen as a source of meaning, action and identity because it informs our beliefs about ourselves and the world and these beliefs influence our behaviour. For example, parents, by transmitting practices, norms, and values, teach their children about their ethnic

group, a process called *family ethnic-racial socialisation* (Juang et al., 2022). Moreover, being a member of a specific ethnic group may offer a sense of belonging, pride and motivation (Markus, 2008). However, developing a sense of belonging and pride may also depend on the lived experiences and the specific context, because some ethnic minority groups may be more or less favoured by a particular society than others (Froehlich et al., 2015; Glock & Krolak-Schwerdt, 2013). For example, in an experimental study with pre-service teachers, Turkish students were viewed more negatively than Italian students (Froehlich et al., 2015), which may influence teachers' performance expectations towards these students. Moreover, students belonging to multiple ethnic groups may identify most closely with the ethnicity of the majority group in school, while the ethnicity of their parents is more salient at home (Hong et al., 2000; Noels & Clément, 2015). As a result, ethnicity is a fluid and changing construct and represents one part of adolescents' complex identities, along with gender, religion and social class (Moffitt et al., 2020).

The minority–majority dynamic is similar in numerous Western countries. Researchers usually categorise children and adolescents as being either minority or majority members based on their own and/or their parents' ethnic origins. For instance, in the Netherlands, Dutch adolescents are the majority group, and Turkish and Moroccan adolescents build the largest minority groups (European Commission, 2022). In Germany, Turkish, Polish or Russian adolescents are the largest minority groups (Vietze et al., 2019), and in Great Britain the most represented groups are of Asian and African descent (Office for National Statistics, 2021). Research on the minority–majority binary from the United States includes most often Asian American or African American as minority groups (Camarillo, 2007). These examples suggest that minority groups are defined by being fewer in number than the majority group. As stated earlier, the numerical aspect has changed in large cities and may continue to change in the upcoming years, according to recent population projections. However, the numerical strength represents only one facet of the definition of ethnic minority and majority groups.

2.1 Ethnic Minority and Majority Youth

Ethnic minority group members are often defined by a high heterogeneity in terms of countries of origin, reasons to immigrate (voluntary/ involuntary), length of residence, permission to stay and work in the receiving society, religion, and self-categorisation (Titzmann & Juang, 2018). Research on adjustment outcomes of ethnic minority children and

adolescents in Europe shows that they develop similar trajectories, with migration morbidity (i.e., more adjustment problems) being more frequent than the immigrant paradox (i.e., fewer adjustment problems; Dimitrova et al., 2016). These effects take, however, different forms depending on age, SES, country, immigrant policies, and cultural diversity. For example, youth in Northern and Western Europe report more adjustment problems than youth in Southern Europe, probably because of a high cultural distance between the heritage and host cultures. Fewer adjustment problems were found in countries with immigration-friendly policies (Dimitrova et al., 2016). Another example are diaspora migrants, who are very similar to the members of the receiving society in terms of religion and ethnic background and, compared with other minority groups, benefit from certain advantages regarding official registration in the new country (e.g., automatically receive citizenship; Tsuda, 2009). Despite some benefits that should ease acculturation, research on diaspora adolescents has shown adaptation processes to be similar to those of other immigrant groups: the experience of acculturative stress, homophily in friendship networks, and identification with the sending culture (Stoessel et al., 2014). However, these processes may differ depending on the length of residence and the pace of adopting new skills and behaviours.

A further characteristic of ethnic minority groups is the group's history. Sue (1991) highlighted how a minority group's history influences adjustment. Some ethnic minority groups have been historically disadvantaged and marginalised, which has led today to ethnic minority children and adolescents usually growing up in neighbourhoods where the share of ethnic diversity is high (i.e., residential and economic segregation). In contrast to ethnic majority members, ethnic minority members own less power and often lack specific rights and opportunities, such as citizenship or the right to vote. Other ethnic minority groups, such as refugees or unaccompanied minors experience even more difficulties, such as applying for the permission to stay in the receiving country or waiting to be enrolled in a school (Dow, 2011; Evans et al., 2020). Hence, minority group members generally face similar experiences related to a low social status (e.g., threat of social identity, structural discrimination and racism), which in turn leads them to display similar mental health and psychological outcomes (Lo & Cheng, 2018).

The language competence is another defining aspect of ethnic minority and majority groups. Compared with ethnic majority group members, first-generation minority members usually have to learn the language spoken in the receiving country before gaining access to various services. Ethnic minority adolescents dispose of more opportunities to speak the language of the majority group than their parents, which is why language acquisition also

influences family processes. Children and adolescents may become ‘teachers’ for their parents and take on specific tasks where they need to translate for their parents, a process called *cultural and language brokering* (Jugert & Titzmann, 2020). In addition, research has shown that ethnic minority adolescents take on an active role in the family and offer more support with different tasks (e.g., emotional and instrumental support, technical brokering) than ethnic majority adolescents (Aumann, 2021; Aumann & Titzmann, 2022).

2.2 Social Identity and Power Dynamics

Despite these predetermined features of ethnic minority and majority groups, the minority–majority dynamic is also characterised by some underlying contextual processes, such as social identity and power dynamics (Seyranian et al., 2008; Sue, 1991; Tajfel, 1979). Based on the *social identity theory* (Tajfel, 1979), social identity is defined as ‘a person’s sense of who they are based on their group membership’. Ethnic minority group members are usually defined by an unfavourable social position in the society they live in, which may influence their self-image, self-esteem and the identification with the national culture (Fleischmann & Phalet, 2018). For instance, ethnic minority youth experience more structural discrimination and everyday racism (e.g., micro-aggressions) than their majority peers (Metzner et al., 2022; Moffitt et al., 2019), which may lead to lower levels of psychological well-being and lower academic performance (Benner & Graham, 2013; Gyberg et al., 2021) or, conversely, motivate to action (Schwarzenthal et al., 2022). However, studies have shown that ethnic identity salience varies across situations and may be increased by personal and contextual characteristics (e.g., contact with same-ethnicity peers, use of the ethnic language; Yip & Fuligni, 2003; Yip et al., 2013), but also by the interactions with parents. For instance, a study showed that a strong connection of mothers with the ethnic culture longitudinally predicted children’s commitment to their ethnic identity and weakened the commitment to the national identity (Spiegler et al., 2019). However, this result may not apply to older adolescents, and other factors such as inter-ethnic friendships may moderate this relationship. More research on dual and multiple identity processes during adolescence is needed to uncover these effects.

Regarding the power definition, Berry (2003) defined ethnic minority members as a group that generally holds less numerical, economic, and political power than the ethnic majority group. These imbalances in power can be explained by drawing on the *social dominance theory* (Sidanius & Pratto, 2001). This theory states that group-based hierarchies

in a society are created on the basis of age (adults vs. children), gender (men vs. women) and other relevant dimensions (e.g., race, ethnicity, religion). With regard to ethnicity, the ethnic majority group makes decisions for the ethnic minority groups (e.g., who should receive permission of residence or the right to vote). Ethnic majority group members are defined by owning more political and economic power, privileges, and freedom because they are in charge of establishing how institutional systems operate and how they affect the future, whereas minority group members take on the role of the recipient and adopt the already established norms and rules. Furthermore, ethnic majority group members can usually rely on better financial resources, profit from better health care, and face fewer ethnic discrimination experiences than ethnic minority group members (Bhutta et al., 2020).

In sum, the previous mentioned theories and conceptualizations reflect the complexity of defining ethnic minority and majority youth. While there may be some clear characteristics that distinguish ethnic minority from majority adolescents (e.g., generation status, language skills, cultural background of parents), the way in which ethnic minority and majority youth stay in relation to each other may also influence their self-definitions and how they are perceived by others. Ethnic minority adolescents still own a less privileged position in the society than ethnic majority adolescents. Ethnic minority adolescents face similar challenges (e.g., structural discrimination, segregation, limited opportunities and resources) that may contribute to different developmental paths compared to ethnic majority adolescents (e.g., lower academic achievement; Frankenberg et al., 2013). Speaking the language of the dominant group or owning citizenship is not the same as having the feeling of really belonging to the majority group. Therefore, the common characteristic of ethnic minority and majority groups is the identification with the minority or with the majority status in a given society based on various characteristics and not necessarily owning numerical strength in a particular context or adopting the language and culture of the dominant group.

Following this line of thought and being aware of the different terms (e.g., ‘immigrant’, ‘migrant’, ‘minority’; ‘non-immigrant’, ‘native’, ‘majority’) used interchangeably in research with ethnic minority and majority groups, I chose the terms ‘ethnic minority’ and ‘ethnic majority’ for this work, because these best describe the participants in all three studies. Based on the previous definitions, an ethnic minority group includes individuals who are smaller in number than the rest of the population, whose language, culture, origin, beliefs or lifestyle differ from the majority group, and who have a different status than the majority group in the social and political context. However, the terms

‘immigrant’ and ‘migrant’ have been intermittently used either to be consistent with the term used in the third Study or to fit the wording chosen in certain studies.

2.3 Ethnic Comparative Research

Comparative approaches date back to examinations of animal behaviour (including that of humans) and until today have had a vast application in medicine, psychology, ecology, animal training and neuroscience (Abramson, 2022; Scott, 1973). With regard to ethnic comparative approaches, the anthropologist Franz Boas (1941) was the first to mention the importance of studying cultural differences and similarities between groups. In his book, he argued about *cultural relativism*, whereby group differences should be understood by looking at the standards and context of a specific group. Interest in ethnicity, however, increased after the civil rights movement during the 1960s in the United States, as well as during the numerous migration waves that followed and still continue today (Calderon et al., 2023; Wegmann, 2014). Significant contributions towards a better understanding of developmental and acculturative outcomes among ethnic groups of adolescents, such as the formation of ethnic identity (Phinney & Ong, 2007), family dynamics (Fuligni & Telzer, 2012), academic achievement (Celeste et al., 2019) and mental health (Umaña-Taylor & Updegraff, 2007) have been made ever since. Comparative studies can be either *cross-national* (i.e., conducting comparisons between countries) or *intranational* (i.e., the study of different groups within a country; Frankenberg et al., 2013; Titzmann & Stoessel, 2014) and usually investigate ethnic group differences in various outcomes (e.g., identity development, peer relationships, academic achievement) in order to establish generality (Scott, 1973). In other words, they attempt to show whether a psychological process applies to all, or to a majority of groups in the same context or in different contexts. The most frequently investigated outcomes in comparative studies of ethnic minority and majority adolescents are academic achievement, mental health, and acculturation (Dimitrova et al., 2016). For instance, Rudolphi and Salikutluk (2021) compared the educational aspirations (i.e., enrolling in university) of ethnic minority and majority youth across four countries (England, Germany, the Netherlands, and Sweden) with different education systems. The results showed that ethnic minority youth had higher educational aspirations in countries where the school systems were less restrictive (e.g., England and Sweden) and lower educational aspirations where the school systems were highly stratified (e.g., Germany and the Netherlands). Although different ethnic groups may

follow different integration paths because of different country policies, understanding how the country-specific settings influence youth adjustment is crucial for creating custom-fit environments in which adolescents can profit from positive development. Comparative research has, therefore, the potential to offer insights into similarities and differences between ethnic groups, between countries and between different contexts of development (Titzmann et al., 2020).

Ethnic comparative research with ethnic minority and majority youth has been used to serve several research purposes. Some examples are to capture the dynamics between general developmental and acculturation processes, to better understand acculturation processes across different setting conditions or to highlight country and group-specific differences that might increase or decrease adaptive acculturation outcomes (Benbow & Aumann, 2020; Jugert & Titzmann, 2020). With regard to the interplay between developmental and acculturation tasks, comparative studies are able to offer insights into how ethnic minority adolescents manage to successfully accomplish normative age-salient tasks, such as developing autonomy or self-regulation skills and, at the same time, acculturation-specific tasks, such as language or bicultural competencies. For instance, a study of mother-child dyads showed that ethnic minority adolescents may develop more mature communication because of language brokering (i.e., translating documents or interpreting daily appointments for parents; Weisskirch & Alva, 2002) compared with ethnic majority adolescents who do not need to offer their parents language support (Titzmann et al., 2015). Another study showed that both acculturation-related tasks (i.e., language use and discrimination hassles) and developmental-related tasks (i.e., academic performance and social support) contribute to higher levels of self-efficacy among immigrant adolescents (Titzmann & Jugert, 2017). These findings underscore again the importance and value of using comparative designs in research with acculturating and non-acculturating youth in order to understand the interplay between developmental and acculturation-related factors on general developmental outcomes.

To further show the feasibility and value of comparative studies, I will refer in the following to acculturation orientations, as one of the best-studied characteristics in immigrant adaptation. Berry's (1980) well-known *bidimensional model of immigrant acculturation orientations* states that there are four types of acculturation that depend on two dimensions: (1) whether immigrants consider maintaining their cultural identity to be of value and (2) whether immigrants consider maintaining relationships with other groups to be of value. On the basis of these dimensions, the acculturation orientations are *integration* (agreement for both dimensions), *assimilation* (disagreement for the first dimension, agreement for the

second), *separation* (disagreement for the second dimension, agreement for the first dimension) and *marginalisation* (disagreement for both dimensions). The last dimension, marginalisation, was later divided into *alienation* (i.e., individuals who reject both their culture and the culture of the host society) and *individualism* (i.e., people who see themselves as individuals and not as part of any cultural group). However, the utility of these strategies of acculturation for ethnic minority youth adaptation depends on the context. From a theoretical perspective, this idea has been highlighted by the *interactive acculturation model* of Bourhis and colleagues (1997). This model switched the focus to the larger social context, stating that the acculturation orientations of the dominant group, together with the acculturation orientations of the minority groups, also influence the interpersonal and intergroup outcomes. According to Bourhis (1997), the acculturation orientations of the host society are also built on two dimensions: (1) whether majority members find it acceptable that immigrants maintain their cultural identity and (2) whether majority members accept that immigrants adopt the cultural identity of the host society. From these two dimensions, next to integration, assimilation, and individualism (see above), *segregation* (i.e., maintenance of one's own cultural identity is accepted) and *exclusion* (i.e., acceptance only for the ethnic ideology) were newly introduced. On the basis of these types of acculturation orientations and other demographic characteristics of the cultural groups, *concordance* (i.e., when the orientations of the groups in contact are similar) or *discordance* (i.e., when one of the groups chooses integration and the other chooses segregation) may emerge in the intergroup communication. Research supporting this model investigated how the ways in which a particular country (context) deals with cultural diversity impact ethnic minority youth adaptation. For instance, a study on Turkish immigrants in four countries with different acculturation policies (i.e., Australia – cultural pluralism, France – integration and assimilation, Germany and the Netherlands - assimilationist) showed that Turkish immigrants report higher identification with the mainstream culture (i.e., majority culture) in Australia and lower identification with the mainstream culture in France, Germany and the Netherlands (Yağmur & van de Vijver, 2012). Therefore, the overall context influences how immigrants' identity develops in relation to the dominant group depending on the level of acceptance or rejection of cultural diversity.

Another example of cross-cultural comparative research shows which mechanisms increase or decrease adaptive acculturation outcomes among youth. A closer look at country comparisons among immigrant families in France and Canada showed that there are similarities and differences between the two receiving contexts regarding parents'

acculturation orientations and minority adolescents' adaptation (Sabatier & Berry, 2008). For instance, similarities were that adolescents and their parents showed agreement on acculturation orientations in both countries, and that adolescents showed less ethnic acculturation orientation compared to their parents. Differences were that adolescents in France were more nationally oriented than adolescents in Canada, and French adolescents reported more discrimination than adolescents in Canada. This cross-cultural comparison reveals that despite parents' contribution, the national context has an impact on immigrant youth's adaptation and supports the interactive acculturation model of Bourhis and colleagues (1997). Factors such as policies toward immigration and cultural diversity or the density of the own ethnic group, influence immigrant's attitudes and their orientations towards their national and ethnic identities. In sum, these studies show that ethnic comparative approaches are trivial to understand differences and similarities between groups and between different setting conditions.

Next to between-group comparison designs, within-group comparative longitudinal designs are able to examine inter- and intra-individual variations among adolescents during the acculturation process (Titzmann & Lee, 2018). More specifically, as ethnic minority youth vary in ethnic or national identity, language skills or inter-ethnic friendships, different subgroups from a minority group can be compared in order to understand various trajectories of development. Although adolescents undergo the same developmental processes, there are differences in the time frame when a process starts or the individual rhythm of accomplishing a task. For example, results from a three-wave longitudinal study of ethnic German immigrant adolescents showed that the speed of adopting the host language (acculturative pace) was a significant predictor of family interactions (defined here as family hassles and child disclosure). A fast increase in host language competencies was associated with more family hassles, whereas a slower increase in host language competencies was associated with fewer family hassles. However, this association was moderated by length of residence: It was stronger among newcomer (0-3 years of residence) immigrant families, and a fast adoption of the host language predicted higher levels of child disclosure (i.e., talking to parents about free-time activities) (Aumann et al., 2022). Overall, this study highlighted that acculturation and developmental processes are intertwined and a more precise comparison among newcomers, medium stayers, and experienced immigrant families reveals more nuanced family trajectories. Such an approach to studying acculturation may be more suitable for future research among youth because more and more adolescents grow up in contexts where the majority group has become one of the minority groups and, as a result, assimilation or

integration are no longer relevant adaptation goals. Studying acculturative timing, tempo, pace and synchronicity shifts the focus away from acculturation as a concept with narrow acculturating goals that may or may not be achieved towards acculturation as a more fluid and specific developmental process, able to offer insights into the interaction between different attributes of ethnic minority members (e.g., length of residence, language competency).

To summarise, ethnic comparative research has significantly improved our understanding of the interplay between development and acculturation and acculturation orientations of ethnic minority youth. Ethnic comparative studies have the potential to uncover similarities and differences between ethnic groups, countries and living contexts, but also within ethnic groups when focusing on similarities and differences between subgroups of minority adolescents. With regard to the adaptation of ethnic minority and majority youth, studying both developmental-related and acculturation-related outcomes is of crucial importance to understand how general processes, such as academic achievement or teacher–student relationship quality can be improved for all adolescents and how ethnic minority youth manage to operate in more than one cultural context.

2.4 From Categories to Processes

As previously stated, only establishing differences between ethnic minority and majority groups offers no tangible solutions or additional knowledge to better understand educational disparities and how to promote positive development. On the contrary, it often reinforces the representations of ethnic minority (e.g., ethnicity and being the target of treatment) and majority groups (e.g., power and being the source of treatment; Graham et al., 1998; Seyranian et al., 2008). For instance, ethnic minority students and their families, not educational systems or other institutions and policies, are usually seen as responsible for low achievement levels (Nelson & Guerra, 2014). This characteristic of ‘blaming the victim’ is what defines a deficit-oriented approach (Patton Davis & Museus, 2019). This deficit-oriented view promotes stereotypes about minority families, such as low parental involvement and engagement with school or, individual characteristics, such as adolescents’ poor language competence or delinquency (Valencia, 2002). In contrast, research shows that other variables than ethnicity explain these differences between ethnic minority and majority families. For example, a study on parental responsibility and involvement among German and

Turkish mothers showed that the attitudes of all mothers toward involvement with school were predicted by their previous experiences with the German school system, a higher educational background, high achievement values and children's younger age (Kohl et al., 2013). With regard to adolescents, a study showed that an explanation for why immigrant adolescents tend to report more delinquent behaviours than the dominant group is because they show a higher frequency of peer-oriented leisure activities. Spending more time with the peer group increases therefore the likelihood to report delinquent behaviours (Raabe et al., 2008). Hence, it may be helpful to compare ethnic minority and majority families and adolescents to better understand if particular behaviours are a real characteristic of an ethnic group or, are due to contextual factors, previous experiences, having more knowledge about a particular topic or individual attitudes. Beliefs influence behaviour, and in the education system a deficit-oriented thinking may have negative consequences for youth's psychosocial and academic development (Hachfeld et al., 2015; Peterson et al., 2016). Therefore, a shift from thinking in categories and labels to explaining the psychological processes that actually lead to similarities and differences between groups may bring groups closer, reduce disparities, and help create trainings or interventions in schools that target changeable characteristics (e.g., beliefs and attitudes). The Society for Research in Child Development issued a special call for more innovative research with ethnic minority children (Cabrera, 2013). Several scholars have noted that research with ethnic minority youth must undergo the transition from the present predominant focus on adversities and negative outcomes to positive developmental outcomes, that highlight the strengths and competencies (e.g., social, linguistic and ethnic identity) of ethnic minority youth and their families (Cabrera, 2013). This goal can be achieved when the results obtained offer a broader understanding of group differences and deliver practical insights and implications. In the following, I describe different theoretical models and innovative methods that can extend knowledge on multiple influences and contribute to a more nuanced understanding of adolescents' positive adaptation in diverse contexts. A closer look at the antecedents, mechanisms and consequences of developmental processes can facilitate interventions that improve the interactions and experiences of ethnic majority and minority adolescents.

A first model that focused on the transfer from individual to social influences and looked at how the social environment affects the cognitive, emotional and linguistic outcomes of minority students (e.g., residential and economic segregation) is the *integrative model for the study of developmental competencies in minority children* (Coll, 1996; Syed et al., 2018). This model promotes three important ideas. First, it draws attention to variables

that are characteristic only of ethnic minority groups and, together with normative tasks, influence their development. Some examples of social position variables are race, social class, and ethnicity, and some examples of social stratification mechanisms are prejudice and discrimination. Second, the model addresses the concept of promoting and inhibiting environments, defined by available or unavailable resources and the compatibility between youth and the settings in which they grow up. Third, the outcomes of this model are the developmental competencies (e.g., coping strategies while facing racism, bicultural competencies) that minority children and adolescents acquire while encountering different cultures. Thus, this model suggests that it is important to underscore certain environmental conditions that ethnic minority youth face every day in order to shift the focus from a deficit-oriented to a resource-oriented perspective in ethnic minority research.

Another, similar model is Suárez-Orozco et al.'s (2018) *integrative risk and resilience model for understanding the adaptation of immigrant-origin children and youth.* Based on a strong ecological influence (Bronfenbrenner & Morris, 2006), the model describes immigrant-origin youth's positive adaptation as the sum of developmental tasks (e.g., self-regulation and responsibility), acculturative tasks (e.g., bicultural competencies), and general psychological adjustment (e.g., well-being). Another characteristic of the model is the study of adaptation at different levels of context – the global level, political and social level, the immediate environment (i.e., neighbourhood, schools, families), and individual level or cross-level interactions. All levels are supposed to interact and influence adaptation. This model also draws attention on risk and resilience factors and emphasizes the heterogeneity of experiences immigrant youth may face. For instance, refugees may be at greater risk than other ethnic groups to experience trauma, ethnic discrimination or fear of deportation of oneself or relatives. In short, the model emphasizes the importance of studying how particular contexts shape the experiences of ethnic minority youth.

After choosing the theoretical model and establishing the research questions, another important aspect to consider when conducting comparative research with ethnic minority and majority groups is choosing the most suitable samples for the study. In comparative studies with a between-group design, there are usually one or more ethnic groups and one 'control' or comparative group. If, for example, researchers want to investigate differences in learning resources between ethnic minority and majority adolescents, then one 'control' group is necessary in order to establish the (non-)existing differences (Syed, 2020). Another example would be to study the adaptation of ethnic minority groups among different countries in Europe. In this case, no 'control' group is necessary and the ethnic groups chosen for each

country must be similar in order to establish equivalence across countries. Hence, deciding on which comparison groups should be investigated depends on the research questions and the aims of the study. The groups should help to either establish generality among different contexts or processes, and/ or to assess specificity in acculturation processes (Bornstein, 2017).

Next to a theoretical model with high explanatory value and choosing the relevant comparison groups, the suitable methods are also a very important step to answer the research questions. Moreover, methods are crucial to shift the perspective from fixed social categories towards more flexible processes. For instance, the best way to study the impact of various contextual levels is with multilevel models. Multilevel modelling is also very suitable for longitudinal data because it takes into account drop-out rates, which are very common when collecting data on multiple measurement occasions (Hox, 2013). With regard to the multilevel modelling of individuals within groups, a well-known example is with students (Level 1), who are nested in classrooms (Level 2) and, therefore, share a common classroom environment or common teachers, which means that students from one particular classroom will always be more similar to one another than students from other classrooms. Multilevel models allow one to distinguish between these two sources of variance (i.e., within and between classrooms). Depending on the research question, two or three levels may be necessary or new predictors of the higher levels may be created on the basis of data aggregation (Asendorpf & Motti-Stefanidi, 2019). A study of school belonging and task engagement demonstrated, for example, that among ethnic minority students, those who perceived more discrimination (Level 1) showed less task engagement. However, when looking at how this relationship may vary as a function of perceived diversity climate (Level 2), the results showed that, at high levels of diversity, the relationship between discrimination and task engagement became non-significant (Heikamp et al., 2020). Therefore, multilevel analyses may add valuable knowledge to understanding adaptation during adolescence by focusing on different contextual settings, such as the classroom, the school, or the neighbourhood. Such studies also offer clear solutions about which interventions should be implemented in schools.

Another possibility to study ethnic groups with a resource-oriented view is by using a person-oriented analytic approach. Compared with a variable-oriented approach, in which the focus is on individual variables and relationships between them, the person-oriented approach captures individual patterns of operating factors for specific groups of individuals (i.e., clusters). Moreover, it can assess the way in which the groups found change over time, which

is especially of interest with regard to psychological processes during adolescence (Bergman & El-Khouri, 2003; Muthén & Muthén, 2000). The primary focus is on adolescents' attitudes and behaviours toward building the group membership and not on ethnicity. This method accentuates the idea that all adolescents face the same normative and migration-related challenges (e.g., cultural and language brokering), that may boost or impede general developmental tasks. In spite of the significant contribution of the person-oriented approach, a few studies have examined developmental processes in this way (Choi et al., 2016; Coatsworth et al., 2005; Spiegler et al., 2019). A study of native Swiss and German migrants found three subgroups of family support—high, medium and low—with migrant adolescents being more highly represented in the high-support and medium-support groups than native adolescents. Migrant adolescents deal with additional tasks in their families and help their parents adapt in the new country, which explains the higher levels of support (Aumann & Titzmann, 2020). Moving away from building groups based on ethnicity to building groups based on continuous variables has at least three advantages. First, it reduces prejudice about marginalised groups by showing that ethnicity is just one of the many characteristics that define adolescents. Second, it emphasises commonalities between groups and shows that two adolescents from two different ethnic groups can belong to one and the same cluster. Third, the aim is to better understand the individual as the result of complex systems operating at different levels (Bergman & Lundh, 2015).

In addition to these approaches, the use of different types of variables may help uncover underlying processes and explain ethnic differences. For instance, the use of moderators may reveal whether other, additional factors strengthen or weaken the assumed relationships between two variables, and the use of mediators may explain a mechanism by which one independent variable affects a dependent variable (MacKinnon et al., 2007). A longitudinal study of intergroup prejudice (i.e., social distance and negative emotions) and contact effects compared ethnic minority and majority youth while investigating mediating (e.g., intergroup anxiety) and moderating (e.g., typicality of outgroup friends) processes (Binder et al., 2009). The results showed considerable differences between minority and majority groups. First, contact effects (i.e., quality and quantity of contact on prejudice) were stronger for majority than for minority youth. Second, a higher level of typicality of outgroup friends led to stronger contact effects among majority youth for both measures of prejudice, whereas among minority youth only small evidence was found for one measure of prejudice: negative emotions. Third, intergroup anxiety was tested as a mediator between the quality and quantity of contact and negative emotions. Lower levels of anxiety were related to less

negative emotions among majority members for both quantity and quality of contact, whereas this relation was non-significant for minority members. Thus, there may be other mechanisms that explain the link between contact and prejudice for ethnic minority adolescents, which underlines the importance of studying more intervening variables.

Following a similar logic, it is necessary to take into account relevant control variables because these may falsely influence the outcomes. Typical confounding variables when studying ethnic minority groups are SES and the level of academic performance (Stanat, 2006). Ethnic minority youth usually dispose of low levels of social and economic capital, which makes it important to control for group differences in SES when conducting comparative studies. Depending on the study's aims, researchers may control for different variables that are supposed to influence the variables of interest (e.g., language competency, academic achievement; Okazaki & Sue, 1995).

In conclusion, there are different possibilities to outline the underlying mechanisms in comparative research among ethnic minority and majority youth and move beyond static social categories. Theoretical models, such as the integrative model for the study of developmental competencies in minority children (Coll, 1996) or the model of integrative risk and resilience for understanding the adaptation of immigrant-origin children and youth (Suárez-Orozco, 2018) have a broad explanatory value because they consider the social and cultural factors that influence developmental outcomes and they seek to understand how strengths and resources can be called on. Furthermore, using more sophisticated methods of analysing the data, such as multilevel models or person-oriented analyses, may extend our knowledge about the surrounding circumstances that contribute to youth development.

2.5 This Dissertation

2.5.1 General Objective

The major goal of this dissertation was to exemplify different possibilities for conducting ethnic comparative research with minority and majority adolescents that offer a deeper understanding of educational disparities and capture the dynamics between ethnic group status and positive developmental processes. According to the previously presented literature and empirical knowledge, similarities and differences between groups are equally important when evaluating implications for the improvement of adolescents' adaptation. Similarities reduce the gap between 'us' and 'them', and differences acknowledge individuals' various cultural and social backgrounds (Hahn et al., 2010). Research with ethnic groups should aim for not only showing that ethnic differences exist, but it should also explain them to avoid false interpretations (Roberts et al., 2020). Therefore, I used multi-informant, person-oriented and longitudinal data in order to display alternative ways that capture the intergroup variance between ethnic minority and majority youth.

2.5.2 Research Gaps and Research Aims

Although all studies focus on comparisons between and within groups, different approaches are used to uncover similarities and differences. Furthermore, a related goal of the studies in this dissertation was to investigate outcomes that promote positive adaptation and a resource-oriented perspective among ethnic minority and majority youth, and focus on highly relevant developmental contexts, such as school and family. Based on the presented research, several research gaps could be identified in the study of ethnic minority and majority adolescents, which are addressed in this dissertation.

Research Gap 1: A deficit- vs. resource-oriented perspective

Research to date on ethnic minority and majority youth has offered useful insights into adolescents' adaptation and development. However, this research has focused more on problem behaviour or achievement gaps, encouraging a deficit-oriented perspective, especially with regard to minority groups. In this dissertation, I focused on indicators of positive youth development. According to the *developmental assets approach* (Scales et al., 2006), internal (e.g., commitment to learning, positive values) and external resources (e.g.,

support from important adults, family) contribute to positive social and educational outcomes. This approach is centred on the role of the social and cultural context in positive development and the need to promote more diversity in methodologies in order to capture more aspects of development (Leman et al., 2017). To address this gap, I studied the impact of external resources on adaptation (e.g., learning resources) and positive outcomes in all three studies. Self-efficacy and life satisfaction as developmental assets are essential for youth's general positive development. Relationships with important adults, such as teachers are crucial for school engagement and achievement. Moreover, feeling supported by parents and connected to a broader network of same-aged peers is an important resilience factor when facing difficulties in the acculturation process (Oppedal & Idsoe, 2015). Therefore, I aimed to highlight positive youth development by focusing on positive outcomes that promote goal-oriented interventions (Leman et al., 2017).

Research Aim 1: Examine positive developmental outcomes among ethnic minority and majority groups by focusing on psychosocial (viz., life satisfaction, self-efficacy and social support) and school adaptation (viz., the teacher–student relationship and academic self-efficacy) in order to promote a resource-oriented perspective → Studies 1, 2 and 3.

Research Gap 2: Contextual variables as explanatory factors for similarities and differences between groups

Supportive relationships with parents, teachers or peers, as well as the environmental conditions are essential for promoting school belonging and academic achievement (Suárez-Orozco et al., 2018). However, it may be that ethnic minority and majority students draw on different factors to build these relationships and, they usually dispose of different levels of resources (e.g., economic, social). To date, numerous studies have documented the shortages ethnic minority youth face in the home or school, but few studies have examined how the home environment and the teacher–student relationship may be improved. Particularly for ethnic minority adolescents, aspects such as ethnic identity or cultural influences while learning are salient factors that may influence their relationships with teachers. It is important to address both individual and contextual predictors to find out which factors contribute to a positive teacher–student relationship quality and successful home learning in diverse classrooms. Research on multi-informant school data is needed because numerous studies have shown only a little agreement between teachers' and students' perceptions (Gregoriadis et al., 2022; Poulou, 2017), which underlines the necessity to investigate why self-perceptions

are different from each other. Moreover, because of existing educational disparities between ethnic minority and majority adolescents, it is important to look at the resources available and how these could be improved.

Research Aim 2: Investigate similarities and differences between ethnic minority and majority groups and offer contextual explanations (e.g., home learning environment, school and classroom culture) for the differences found. → Study 1: *Home-Learning during COVID-19: The Psychological Adjustment of Minority and Majority Adolescents*) and Study 2: *Relationship Quality in Student-Teacher-Dyads: Comparing Student and Teacher Determinants in Multicultural Classrooms*

Research Gap 3: Methodological approaches to (comparative) research on minority and majority youth

Studies with both ethnic minority and majority samples can divide instead of unite groups. Person-oriented approaches, however, set ethnic categories aside and start with the behaviour of interest. This approach has the potential to capture interactions between developmental and acculturation-related tasks and thus shift the focus from stand-alone social categories like ethnicity to more complex psychological processes adolescents undergo. Longitudinal person-oriented studies are particularly useful because they capture both intra-individual and inter-individual differences in development and migration. However, person-oriented studies with minority and majority groups are not the norm. Some research has focused only on ethnic minority groups to identify clusters of acculturation strategies (Choi et al., 2016; Coatsworth et al., 2005) or of ethnic identity processes (Spiegler et al., 2019), but only few have looked for possible clusters among both ethnic minority and majority groups (Aumann & Titzmann, 2020). Based on data from two minority and one majority group and different contexts, I sought to identify social support trajectories among ethnic minority and majority youth described by involvement with family, school and peers and host and heritage culture orientations.

Research Aim 3: Analyse the variation between adolescents based on subgroups reflecting behaviour instead of the ethnic category. → Study 3: *Everybody Needs Somebody: Specificity and Commonality in Perceived Social Support Trajectories of Immigrant and Non-Immigrant Youth*

2.5.3 Study Overview

To fill in the research gaps, I conducted three empirical studies based on two data sets from two larger, longitudinal projects. The first project (Studies 1 and 2) is called 'Teacher-Parent Interactions: Improving the Academic Achievement of Ethnic Minority and Majority Adolescents', and was funded by the programme 'Niedersächsisches Vorab' made available by the Ministry for Science and Culture in Lower Saxony, Germany. The second project (Study 3) is called 'The Impact of Social and Cultural Adaptation of Juvenile Immigrants From the Former Soviet Union in Israel and Germany on Delinquency and Deviant Behavior', and was funded by the German Israeli Project Cooperation (DIP-4.1). In Study 1 and Study 2, the participating children and adolescents were ascribed to a minority or to a majority group in accordance with the official German definition of migration background: If they or at least one of their parents came from another country or did not have German citizenship at birth (Statistisches Bundesamt, 2023). In addition to the country of origin, an important characteristic of the minority group that should be considered is the shared group status, which includes the shared experiences of being a member of a social minority in a given context – in this case, Germany. In Study 3, the minority groups were composed of adolescents who migrated from the former Soviet Union to Germany (ethnic German diaspora migrants) and Israel (Russian Jews). In all three studies, the majority group members shared the characteristics of the social dominant group in Germany and included all children and adolescents with no migration history in their own or their parents' generation.

In the first study, I assessed academic self-efficacy and life satisfaction trajectories between ethnic minority and majority adolescents at two time points: before and during the COVID-19 pandemic. Moreover, I examined which aspects of the home learning environment (i.e., learning conditions and parental involvement) are able to account for the differences found between the two groups. In a final step, I looked at predictors that may improve home learning environments. This study captures the existing disparities between minority and majority adolescents and explains these disparities with variables related to the home learning environment.

The second study captures the school as immediate environment and important context for adolescents' academic development. In this study, I examined similarities and differences between ethnic minority and majority students and their classroom teachers regarding relationship quality (i.e., instrumental help and conflict). Drawing on a sample of student-teacher-dyads, I looked at how relationship quality differs depending on the group

membership and, in addition, I tested different student-level and classroom-level predictors that may explain the group differences found before. This study shows another approach of addressing minority–majority differences, as it adds group-specific predictors that may explain variance over and above the variance at the individual level.

The third study included three contexts, school, family and peers and investigated social support trajectories as an indicator for positive development in two immigrant (ethnic German diaspora migrants and Russian Jewish adolescents) and one non-immigrant (non-immigrant German) group. The aims of this study were to find out whether similar social support trajectory classes can be found across groups, whether developmental and/or acculturation-related processes (e.g., involvement with school, family and peers, heritage and host culture orientations) predict class membership, and whether social support trajectory classes associate with changes in self-efficacy. With regard to minority–majority relations, the approach used here avoids an early classification of adolescents into ethnic groups and investigates how adolescents differ in terms of developmental trajectories.

3. Study 1: Home-Learning during COVID-19: The Psychological Adjustment of Minority and Majority Adolescents

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Abstract

The coronavirus disease (COVID-19) pandemic and the resulting infringements of day-to-day life have affected families through school closures and home-learning. Yet, little research investigated how adolescents and their families could be supported during this time. Our two-wave study had three aims. First, we examined life satisfaction and academic self-efficacy trajectories among ethnic minority and majority adolescents. Second, we considered the role of the home learning environment (learning conditions and parental involvement) in explaining ethnic status group differences. Third, we studied pandemic-related familial factors that contributed to positive home learning environments. The sample comprised 121 ethnic minority (M_{age}= 14.04; *SD* = 1.25; 53% female) and 105 ethnic majority adolescents (M_{age}= 14.36; *SD* = 1.25; 59% female) in Germany. Results of repeated measures analyses of variance (ANCOVAs) showed distinct trajectories in adolescents' adjustment (Time x Ethnic status group interaction: η_p^2= .02 for academic self-efficacy and η_p^2= .03 for life satisfaction). Whereas ethnic minority adolescents reported stable academic self-efficacy and a decrease in life satisfaction, ethnic majority adolescents reported stable life satisfaction and an increase in academic self-efficacy. Accounting for learning conditions reduced the differences between minority and majority adolescents to non-significance. Parental involvement did not explain these differences, although it was itself important for adjustment outcomes in both groups. Hierarchical regression analyses showed that good student–teacher communication, a positive family climate and fathers' short-time work contributed to the home learning environment. Findings highlight the decisive role of the family context during home-learning and the importance of learning conditions in overcoming educational disparities.

Impact and Implications

This study provided evidence that learning conditions at home during the coronavirus disease (COVID-19) school closures reduce disparities in ethnic minority and majority adolescents' adjustment. As the home learning environment was predicted by student–teacher communication and pandemic-related familial changes, educators, and policy makers should note the importance of effective student–teacher communication in creating a positive learning environment and supporting parental involvement. Schools can support this by providing quiet workspaces, and nondigital equipment or learning materials.

Keywords: COVID-19, adolescence, well-being, school closures, longitudinal comparative research

Home-Learning during COVID-19: The Psychological Adjustment of Minority and Majority Adolescents

The COVID-19 pandemic has had pervasive effects in most life domains and throughout the world (Alzueta et al., 2020; Grasso et al., 2021). In many countries, schools were forced to close on a national scale shifting instruction and learning from the school into the home and onto the shoulders of parents, many of whom were also undergoing significant work-related changes. Thus, adolescents experienced simultaneous and far-reaching changes to two of their most important developmental micro-contexts - school and family (Suárez-Orozco et al., 2018). Specifically, adolescents may have suffered from a loss of social connection, support and instructional practices provided by peers and teachers in the classroom environment (Schunk, 1995), while at the same time, parents may not have been available or prepared for the task of supervising developmentally appropriate learning (Bubb & Jones, 2020; Kim & Hill, 2015). The effect of these drastic and unique measures on adolescent adjustment remains unclear. In this longitudinal study, we therefore considered how the COVID-19 pandemic school closures affected adjustment outcomes that reflect positive development during adolescence and may offer important insights for an optimal adaptation in times of crisis. The first outcome, life satisfaction has been defined by Diener et al. (1985) as the cognitive, global evaluation of one's present life situation. The second outcome, academic self-efficacy refers to the beliefs in one's own capabilities to organize and execute acts that lead to desired educational goals (Zimmerman, 1995). We considered both these outcomes because they each represent a general and a school-specific component of well-being and because both of these outcomes are likely to be affected by pandemic-related changes.

This study was motivated by the desire to provide insights into how best to support families in dealing with school closures and home-learning. More specifically, our study had three aims. First, we investigated differences in the adjustment trajectories of ethnic minority and majority adolescents. Second, we considered whether differences in learning conditions at home and parental involvement as aspects of the home learning environment can account for ethnic group differences in adjustment trajectories. Third, we examined which pandemic-related familial processes contributed towards beneficial learning conditions and increased parental involvement.

With respect to our first aim, we differentiated between ethnic minority and majority groups, because while previous research has shown that adolescents' academic self-efficacy

and life satisfaction generally decrease as they advance through school (Schunk & Pajares, 2002; Herke et al., 2019), ethnic minorities report lower life satisfaction over time (Tang, 2019) and lower academic self-efficacy than ethnic majorities (Bondy et al., 2017). In line with research that has shown that long-term ethnic minority groups in Germany undergo similar migration-specific hassles, such as language and discrimination hassles, and share the experience of being regarded as lower status with the expectation to adapt to German cultural values (Brenick et al., 2012), we focused on this shared experience of being a member of a social minority rather than ethnic origin or heritage as the defining common characteristic of this group that differentiated it from those adolescents with no recent familial migration (based on parent information). This is also in line with recent theorizing in developmental science that warns against essentializing racial or ethnic groups and overemphasizing the role of culture in research (e.g., Causadias et al., 2018; Gjerde, 2014).

Regarding our second aim studies have shown that the school environment is of particular importance in predicting ethnic minority adolescents' life satisfaction and academic self-efficacy (Schachner et al., 2017; Schunk & Pajares, 2002; Usher & Pajares, 2006), raising concerns that school closures could exacerbate pre-existing educational disparities that already disadvantage ethnic minorities in multicultural societies (Organization for Economic Co-operation and Development [OECD], 2018). Concerning our third aim, past research also highlights potentially adaptive factors and processes situated within the home learning environment (HLE; e.g., Bradley et al., 2001), which may help to reduce educational disparities. Due to the fundamental and unprecedented pandemic-related changes, however, it is uncertain whether and to what extent these findings can be applied to the home-learning conditions and effects during the COVID-19 pandemic.

Disparities between Ethnic Minorities and Majorities during the COVID-19 School Closures

While empirical considerations of changes before and after the COVID-19 pandemic school closures are still rare, first (cross-sectional) reports on home-learning during the pandemic seem to indicate an exacerbation of pre-pandemic disparities. Ethnic minority adolescents, who were already living under less favorable conditions before the pandemic seemed more negatively affected than their peers (Andrew et al., 2020; Huber et al., 2020), as they missed more online classes, and had fewer resources for online learning (internet access, computers for all children, learning materials), compared to majority adolescents. In addition,

first analyses into the pandemic's consequences showed that ethnic minority parents were more affected than ethnic majority parents. Ethnic minority parents are more likely to face financial problems, unemployment and stress during the pandemic (Brown et al., 2020). Based on these findings alone, which highlight negative consequences of moving learning from the school environment to a potentially overburdened family environment, it seems feasible that ethnic minority adolescents would show less favorable adjustment trajectories than ethnic majority adolescents. However, switching from school to home learning might also foster academic progress for some ethnic minority adolescents, for instance when they have experienced repeated discrimination from teachers and/or peers at school but are well supported at home (e.g., Benbow et al., 2021). It seems likely, then, that the home learning environment can be a decisive factor in understanding when the pandemic-related changes in learning environment might exacerbate or compensate existing disparities between ethnic minority and majority adolescents.

The Role of the Home Learning Environment

Past research has highlighted potentially adaptive factors and processes situated within the home learning environment (e.g., Bradley et al., 2001). The Family Investment Model (FIM; Schofield et al., 2011) posits a link between financial resources in the family, the HLE and academic results. It suggests that parents who have better financial resources can offer their children better learning conditions at home and more stimulation for learning both directly and indirectly. In turn, these material investments lead to greater adaptive functioning and better academic results (Melby et al., 2008). Research on parental educational involvement at home has also identified the availability of learning materials and the quality of parent-child interactions as key features of HLEs that support adolescents' educational development (e.g., Bradley & Corwyn, 2002). Therefore, in this study, we focused on these two features of the HLE: learning conditions and parental involvement. Learning conditions refer to environmental characteristics such as room to study, silence while learning, technical equipment and learning materials (books, notebooks), while parental involvement refers to strategies that parents apply at home in order to enhance their children's participation to school related tasks, such as time management, enhancing children's motivation to learn and helping children progress academically. Thus, we investigated parental involvement and home-learning conditions as two crucial dimensions of

the HLE and considered their role in explaining disparities between minority and majority ethnic groups.

Based on the literature, lower resources should translate into less favorable learning conditions for minority than majority adolescents. In Germany, ethnic minorities are usually employed in lower paid jobs limiting their financial resources and it was already less likely that both parents in ethnic minority families worked full-time (15%) than in ethnic majority families (24%) before the pandemic (Sommer et al., 2010). These differences may go beyond monetary concerns. For instance, Turkish mothers (the largest minority group in Germany) reported a significantly lower level of education (as well as economic capital) than ethnic majority mothers (Stoessel et al., 2011) making it harder for them to provide appropriate instruction in educational matters. Ethnic minority families also usually live in smaller households, which may limit the availability of quiet study spaces or lead to family tensions (Andrew et al., 2020). In addition, because ethnic minority families usually have more children than ethnic majority families (Sommer et al., 2010), adolescents may have to share parental support and their study space with their siblings, making it harder for them to keep up with the educational changes and achieve academic progress. The quality of parental involvement in ethnic minority and majority families may also differ. Less successful parent-teacher interactions (Crosnoe & Ansari, 2015) and/or parents not speaking the language of the school instruction (Titzmann & Gniewosz, 2018) can impede parental provision of instructional support at home.

Given the basic assumption in our research that the home learning environment is decisive, we also wanted to learn which pandemic-related familial factors were associated with it. The first factor considers aforementioned changes in parents' working situation during the pandemic, which is likely to influence the amount of time parents have available to engage in their children's learning. Depending on the job type, parents may or may not have the possibility to work from home. Moreover, minority parents often have jobs which are less likely to be accomplished in home-office conditions (Giesing & Hofbauer, 2020), making them less available for their children than majority parents. Therefore, changes in the work situation, such as being in short-time work (i.e., a reduction in normal working hours or a complete suspension of work with a state subsidized financial compensation) or working from home should lead to a better HLE, because parents may be more available for their children. The second factor considers family relationships, which are known to be essential for adolescents' psychological and school adjustment especially in times of crisis (Suárez-Orozco et al., 2018). A family climate characterized by cohesion, positive communication

and less conflict promotes parental involvement and fosters adolescents' learning behaviors (Xia et al., 2016). Especially during home-learning, adolescents and parents have to develop new routines, which require good family cohesion. Therefore, a positive family climate should be associated with a better HLE. Thirdly, we considered the role of student-teacher communication, an essential source of informational, instructional and emotional support for families during home-learning (Huber et al., 2020) and well-known predictor of parental involvement over time (Cheung, 2019). Student-teacher communication reflects the students' ability to contact their teachers (via e-mail or phone) in order to get clarifications or feedback while learning at home. Hence, the HLE should be more effective in families where more student-teacher communication takes place. Finally, older adolescents may show lower levels of parental involvement than younger adolescents (Oswald et al., 2018), higher family income has been shown to predict better learning conditions (Rideout et al., 2016) and adolescent girls tend to receive less parental assistance than adolescent boys (e.g., Pomerantz et al., 2007).

Present Study

The main purpose of this study was to determine how ethnic minority and majority adolescents' and their families cope with the period of COVID-19 related school closures. In this regard, our first aim was to investigate how the shift from learning in school to home learning during the COVID-19 pandemic might have influenced ethnic minority and majority adolescents' life satisfaction and academic self-efficacy. We expected a stronger decline in life satisfaction (H1.1) and academic self-efficacy (H1.2) for ethnic minority than for ethnic majority adolescents (controlling for age effects).

Our second aim was to examine if these adjustment trajectories might be explained by learning conditions and parental involvement as aspects of the home learning environment. We expected that the disparities between ethnic minority and majority adolescents could be accounted for by learning conditions (H2.1) and parental involvement (H2.2).

Finally, to address the third aim, we analysed familial pandemic-related predictors that could explain variation in the home learning environment. We expected that parents in short-time work or home-office (H3.1), a positive family climate (H3.2) and a higher level of student-teacher communication (H3.3) predict a better home learning environment. We investigated our third hypotheses controlling for age, socioeconomic status (SES), gender, and ethnic group status (minority/majority) to avoid spurious associations.

Method

Participants

The data used in this study originates from a larger German project on the role of parent-teacher interactions in improving academic achievement of ethnic minority and majority adolescents. The research was supported by funds of the "Niedersächsisches Vorab" made available by the Ministry for Science and Culture in Lower Saxony. In order to be able to compare ethnic minority and majority groups, we specifically chose to recruit adolescents who study in schools with a higher proportion of ethnic minorities (13.5%, compared to 5.2% in other school types). These schools are referred to as integrated comprehensive schools (*Integrierte Gesamtschule*) and are a type of state school for all competence levels (no fees, no entry exams), combining vocational and higher education tracks and which tend to serve families from the school neighborhood with similar socioeconomic background characteristics (Baumert et al., 2003). To collect the data, we identified all schools in our region which meet these predefined criteria. Of these 13 schools in total, 7 agreed to participate in the study and provided data from at least one class per school grade.

The longitudinal sample comprised 226 adolescents (M_{age} = 14.19; *SD*= 1.25; range 11-17; 126 female) enrolled in the 6th to 10th school grade. Nobody identified as non-binary. Based on the ethnic origin of parents we identified 121 ethnic minority participants with a recent familial migration history, of which 91% were born in Germany. The largest ethnic minority groups in our study were of Turkish- (11%) and Russian- (5%) heritage, which also reflect the largest ethnic minority groups in Germany. Authors did not come from or self-identify as belonging to the ethnic minority groups that participated in this study.

Measures

The second time point of our longitudinal study was developed in reaction to the onset of the COVID-19 pandemic and the sudden, unprecedented move to home-learning. Thus, we developed scales that reflect both the particularities of the COVID-19 pandemic and the challenges of home-learning, focusing on short scales to meet the needs of schools, teachers, and adolescents during home-schooling. In consequence, all scales apart from family climate, satisfaction with life and academic self-efficacy were only assessed at Time 2. All items presented in the following are translated from German. All items were coded so that higher

scores indicated higher levels of the assessed construct. We further report McDonalds' omega along with Cronbach alphas for each scale, as recent studies have shown that omega presents less risk of false estimations of reliability than alpha coefficients and does not assume essential tau-equivalence (Dunn et al., 2014; Hayes & Coutts, 2020). Furthermore, all scales assessed showed systematic and expectable associations with other theoretical constructs providing evidence for the validity of the assessed constructs.

Demographic Information

Adolescents reported their age, gender, and SES at both time points. Migration background was assessed at Time 1 by asking children about their parents' country of birth. Age and gender were assessed by answering short, simple questions. SES was measured by asking children about their opinion regarding their family's financial situation based on 5-response options, from *very bad* to *very good*. This type of measure has evidence for validity when assessing SES in adolescent samples. For example, previous studies showed high inter-rater stability between adolescents' and parents' reports on SES (Lien et al., 2001) and significant correlations between adolescents' reports on SES and the job status of fathers, r = .16, $p < .001$ and mothers, r = .15, $p < .01$ (Brenick et al., 2012). In this study there was an expectable positive correlation between SES and father's working from home (r = .183, p = .006) and current family climate, respectively (r = .216, p = .001).

Satisfaction with Life

Adolescents rated their level of life satisfaction based on the 5-items Satisfaction with Life Scale by Diener et al. (1985). An example of an item was "In most ways my life is close to my ideal.". Participants scored each item on a Likert-response scale ranging from 1 (*not true at all*) to 7 (*completely true*). Reliability coefficients for Time 1 and Time 2 were good: α T1 = .82; ω T1 = .83; α T2 =.84; ω T2 = .85.

Academic Self-efficacy

Adolescents' beliefs that they can master school tasks were measured with the 6-items Academic Self-Efficacy Scale by Roeser et al. (1996). An example of an item was "I can do even the hardest school work if I try." Participants scored each item on a Likert-response scale ranging from 1 (*does not apply at all*) to 7 (*applies completely*). Reliability coefficients for Time 1 and Time 2 were good/excellent: α T1 = .89; ω T1 = .89; α T2 = .90; ω T2 = .90.

Learning Conditions

We developed a measure of adolescents' learning conditions at home comprising six items. Examples of items were "I have sufficient technical equipment for learning (e.g., Internet, computer)" and "I have a quiet room at home where I can study." Participants scored each item on a Likert-response scale ranging from 1 (*does not apply at all*) to 7 (*applies completely*). Reliability coefficients for this scale were good: $\alpha = .83$; $\omega = .85$.

Parental Involvement

We measured parents' efforts to motivate their children during the school closures and help with school tasks with five items on a 7-point Likert scale ranging from 1 (*not applicable at all*) to 7 (*applies completely*). Examples of sample items were "My parents help me to manage my time." and "My parents help me to make a progress in learning." Reliability coefficients for this scale were excellent $\alpha = .94$; $\omega = .95$.

Parents' Work Situation

Adolescents were asked how the work situation of their mothers and fathers changed during the pandemic. They rated the same statements (whether he/she is working from home and whether he/she is in short-time work) for both parents either with a *yes* or a *no*. Other options (e.g., sickness, job loss) were also available but not introduced in the analyses because of the small number of respondents who endorsed these options ($n < 10$).

Student-Teacher Communication

Adolescents rated how well they could stay in touch with their teachers on a 7-point Likert scale ranging from 1 (*not applicable at all*) to 7 (*applies completely*). The scale consisted of two items: "I am able to talk to my teachers." and "I am able to write e-mails to my teachers." There was a moderate Pearson correlation between the two items, $r(209) = .40$, $p < .001$.

Family Climate

The quality of the family climate was assessed with the Family Climate Scale by Schneewind (1987) on a 7-point Likert scale ranging from 1 (*not true at all*) to 7 (*completely true*). We used only the Time 2 measurement for family climate, as we were interested in the current family climate during the pandemic. The scale comprised 8 items related to

communication (e.g., “We can discuss problems together in peace.”) and cohesion (e.g., “We like to do something together as a family.”). The total score comprised the mean of all items. Reliability coefficients for this scale were excellent: α = .93; ω = .93.

Procedure

Permission to conduct the study was obtained from the regional school authority, school directors and parents. School directors agreed to act in loco parentis. Parental consent was obtained actively in paper-pencil form at the first time point, and passively via email at the second time point. Adolescents had the final decision regarding their participation, after being fully informed about the purpose of the study, their voluntary participation and the means of withdrawal at any time without consequence. At Time 1 (June to October 2019), participants filled in a paper-pencil questionnaire during class time under supervision of a trained team of researchers and research assistants. Time 2 (May to July 2020) took place online due to the pandemic-related school closures. In Germany, schools were closed from mid-March to the end of April. After that a gradual return was planned, but home-learning remained the major form of education until the end of the school year in July.

Data Analytic Strategy

To investigate Aim 1, whether there are longitudinal changes in life satisfaction (H1.1) and academic self-efficacy (H1.2) between groups, we conducted two 2 (Time) x 2 (Group: ethnic minority or majority) repeated measures analyses of covariance (ANCOVAs) while controlling for age. Aim 2 was to examine which aspect of the home learning environment (learning conditions and/or parental involvement) would better account for the ethnic group differences. Since both control variables were associated with the outcomes, we conducted separate repeated measures ANCOVAs for each control variable in order to be able to identify which of the two control variables would better explain the group differences. Regarding Aim 3, to predict adolescents’ learning conditions and parental involvement during the pandemic, we conducted two step-wise hierarchical linear regression analyses. In the first step of the regression, we controlled for age, SES, gender, and ethnic group status and, in the second step, we introduced pandemic-related variables, such as parents’ work situation (H3.1), current family climate (H3.2), and student-teacher communication (H3.3). Analyses were conducted in SPSS Version 26.

Results

The overall level of missingness in the data was 11% and, according to Little's (1988) MCAR test, the data was missing completely at random: $\chi^2(73) = 73.371$, $p = .47$, thus allowing us to handle missing data with multiple imputation. As compared to listwise deletion, the benefit of the chosen procedure is that it does not lead to common disadvantages, such as losing statistical power or biased parameter estimation (Graham et al., 2003). The mean scores for all study variables by ethnic group are presented in Table 1 highlighting statistically significant group differences. Ethnic minority adolescents reported poorer learning conditions and lower levels of student-teacher communication than ethnic majority adolescents. Parents of ethnic majority adolescents worked at home more frequently. The correlations between study variables are presented in Table 2.

Means and standard deviations for our outcomes are provided in Table 1. To test hypotheses H1.1 and H1.2, we conducted two 2 (Time) x 2 (Group: ethnic minority or majority) repeated measures ANCOVAs, performed separately per outcome and controlled for age. The repeated measures ANCOVA on life satisfaction yielded a significant interaction effect of time and ethnic group status, such that ethnic minority adolescents reported a significantly greater decrease in life satisfaction than ethnic majority adolescents, $F(1, 222) = 7.14$, $p = .008$, $\eta_p^2 = .03$ (see Figure 1). However, there were no significant main effects of time or minority status. Independent T-tests showed that groups did not significantly differ on life satisfaction at Time 1, $t(224) = 0.40$, $p = .690$, $d = 0.05$ ($M_{\text{ethnic minority}} = 5.40$; $SD = 1.30$ vs. $M_{\text{ethnic majority}} = 5.34$; $SD = 1.04$), but there was a small statistically significant difference between groups at Time 2, $t(224) = -2.16$, $p = .032$, $d = 0.29$ ($M_{\text{ethnic minority}} = 4.94$; $SD = 1.44$ vs. $M_{\text{ethnic majority}} = 5.30$; $SD = 1.04$).

Table 1

Descriptive Statistics for Study Variables

	Minority group *M (SD)*	Majority group *M (SD)*
N	121	105
Female	53%	59%
Age	14.04 (1.25)	14.36 (1.25)
SES	3.93 (0.77)	3.94 (0.65)
Learning conditions***	5.51 (1.20)	6.32 (0.85)
Parental involvement	4.85 (1.90)	5.06 (1.74)
Living with both parents	40%	32%
Living with one parent	13%	14%
Mother short-time work	8%	11%
Father short-time work	16%	16%
Mother home-office***	5%	20%
Father home-office**	7%	21%
Current family climate	5.47 (1.42)	5.61 (1.13)
Student-teacher communication*	4.75 (1.51)	5.21 (1.47)
Life satisfaction T1	5.40 (1.30)	5.34 (1.04)
Life satisfaction T2*	4.94 (1.44)	5.30 (1.04)
Academic self-efficacy T1	5.60 (1.14)	5.42 (1.03)
Academic self-efficacy T2	5.55 (1.13)	5.66 (0.92)

Note: Groups differ significantly in these variables. *$p < .05$. **$p < .01$. ***$p < .001$.

An analogous ANCOVA on academic self-efficacy, also yielded a significant interaction effect indicating that ethnic majority adolescents reported an increase, while ethnic minority adolescents reported hardly any change in academic self-efficacy over time, $F(1, 222) = 4.91$, $p = .028$, $\eta_p^2 = .02$ (see Figure 2). There were no significant main effects of time or ethnic group status. Independent T-tests showed no statistically significant differences between groups on academic self-efficacy at Time 1, $t(224) = 1.22$, $p = .224$, $d = 0.17$ (M_{ethnic}

$_{\text{minority}}$ = 5.60; *SD* = 1.14 vs. $M_{\text{ethnic majority}}$ = 5.42; *SD* = 1.03) and Time 2, *t*(224) = -0.82 , *p* = .416, *d* = 0.11 ($M_{\text{ethnic minority}}$ = 5.55; *SD* = 1.13 vs. $M_{\text{ethnic majority}}$ = 5.66; *SD* = 0.92).

Hence, our results showed that the two groups reported different trajectories in their change of life satisfaction (H1.1) and academic self-efficacy (H1.2) from before the onset of the pandemic to home-learning, which supported our assumptions. The reported changes were, however, slightly different than expected, because majority adolescents even reported an unexpected increase in academic self-efficacy over time.

Figure 1

Satisfaction with Life Before and During the Pandemic by Ethnic Group (controlled for age)

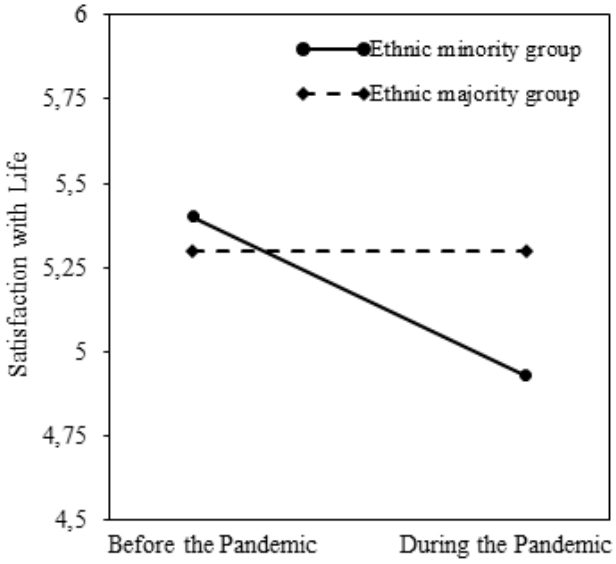
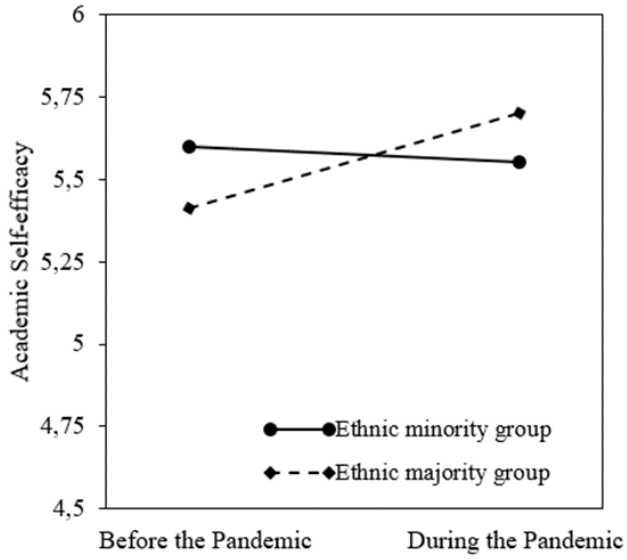


Figure 2

Academic Self-efficacy Before and During the Pandemic by Ethnic Group (controlled for age)



To test our next hypotheses, that these different trajectories in minority and majority ethnic groups can be accounted for by differences in learning conditions (H2.1) and parental involvement (H2.2), we conducted four further 2 (Time) x 2 (Group: ethnic minority or majority) repeated measures ANCOVAs on the same outcomes, introducing learning conditions and parental involvement as covariates and, once again, controlling for age. Importantly, and in line with our hypothesis, in the model with life satisfaction as the outcome and learning conditions as the covariate, the interaction effect of ethnic group status and time was no longer significant, $F(1, 222) = 2.95$, $p = .087$, $\eta_p^2 = .013$, and the effect of learning conditions was significant, $F(1, 222) = 24.62$, $p < .001$, $\eta_p^2 = .10$, as expected. In the model including parental involvement as a covariate the interaction effect remained significant, $F(1, 222) = 6.01$, $p = .015$, $\eta_p^2 = .026$. The effect of parental involvement was also significant, $F(1, 222) = 22.26$, $p < .001$, $\eta_p^2 = .091$.

Table 2

Bivariate Correlations between Study Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Age	1															
2. SES	-.18**	1														
3. Female	.09	-.06	1													
4. Minority group	-.13	-.01	-.06	1												
5. Mother short-time work	.04	-.01	-.10	-.05	1											
6. Father short-time work	.04	.08	-.08	-.01	.10	1										
7. Mother home-office	.01	-.02	-.14*	-.23**	.06	.03	1									
8. Father home-office	.03	.18**	-.12	-.21**	.27**	.04	.18**	1								
9. Learning conditions	.09	.07	.02	-.36**	.11	.02	.14*	.08	1							
10. Parental involvement	-.21**	.20**	-.30**	-.06	-.07	.16*	-.01	-.06	.35**	1						
11. Current family climate	-.08	.22**	-.17*	-.06	.08	.06	.01	.09	.46**	.55**	1					
12. Student-teacher communication	.11	.02	.15**	-.15*	-.02	-.02	.03	.03	.35**	.18**	.20**	1				
13. Life satisfaction T1	.03	.16*	-.07	.03	.03	-.05	.00	.02	.19**	.16*	.32**	.24**	1			
14. Life satisfaction T2	.03	.26**	-.14*	-.14*	.09	.01	.05	.11	.36**	.34**	.49**	.27**	.51**	1		
15. Academic self-efficacy	-.01	.11	-.02	.08	-.08	-.07	-.02	-.12	.16*	.17*	.28**	.27**	.37**	.22**	1	
16. Academic self-efficacy	-.06	.07	-.10	-.05	.02	-.08	.05	-.01	.51**	.30**	.43**	.37**	.38**	.40**	.51**	1

Note. *$p < .05$. ** $p < .01$. (two-sided)

For academic self-efficacy as the outcome, including learning conditions as a covariate yielded a non-significant interaction effect of ethnic group status and time, $F(1, 222) = 0.19$, $p = .665$, $\eta_p^2 < .01$, and a significant direct effect of learning conditions, $F(1, 222) = 46.07$, $p < .001$, $\eta_p^2 = .172$, in line with our hypothesis. In the model including parental involvement as a covariate the interaction effect remained significant, $F(1, 222) = 4.30$, $p = .039$, $\eta_p^2 = .019$. The effect of parental involvement was also significant, $F(1, 222) = 17.47$, $p < .001$, $\eta_p^2 = .073$. Thus, Hypothesis 2.1 regarding the effect of learning conditions on ethnic group differences apparent during the pandemic was supported, while Hypothesis 2.2 regarding parental involvement was not supported, despite results indicating that parental involvement is important during this time.

We conducted two step-wise hierarchical linear regression analyses to test for our final hypotheses regarding factors that could predict the HLE. All regression coefficients are presented in Table 3. Regarding learning conditions, the results of Step 1 ($R^2 = .14$, $F(4, 221) = 8.69$, $p < .001$) showed that ethnic majority adolescents had better learning conditions ($\beta = -.35$, $t(221) = -5.54$, $p < .001$). In Step 2, higher levels of positive family climate ($\beta = .41$, $t(215) = 7.06$, $p < .001$) and good student-teacher communication ($\beta = .21$, $t(215) = 3.73$, $p < .001$) were associated with better learning conditions. Adding these predictors could explain additional variance in learning conditions $\Delta R^2 = .24$, $F(10, 215) = 13.24$, $p < .001$.

Regarding parental involvement, the results of Step 1 ($R^2 = .16$, $F(4, 221) = 10.16$, $p < .001$) showed that parental involvement was lower for adolescents of higher age ($\beta = -.17$, $t(221) = -2.72$, $p = .007$), was higher in families with a better financial situation ($\beta = .15$, $t(221) = 2.42$, $p = .016$) and was lower for girls ($\beta = -.28$, $t(221) = -4.47$, $p < .001$). In Step 2, parental involvement was higher when fathers were in short-time work ($\beta = .14$, $t(221) = 2.67$, $p = .008$) and lower when fathers were working from home ($\beta = -.14$, $t(221) = -2.50$, $p = .013$). As with learning conditions, parental involvement was associated with a positive family climate ($\beta = .46$, $t(221) = 8.39$, $p < .001$) and with good student-teacher communication ($\beta = .13$, $t(221) = 2.37$, $p = .019$). Adding these predictors could explain additional variance in parental involvement $\Delta R^2 = .28$, $F(10, 215) = 16.87$, $p < .001$. Thus, our third hypothesis was partially confirmed for work-related changes (H3.1), and fully confirmed for family climate (H3.2) and student-teacher communication (H3.3).

Table 3
Hierarchical Regression Results for Home Learning Environment

	Learning conditions					Parental involvement				
	B	*SE B*	β	R^2	ΔR^2	*B*	*SE B*	β	R^2	ΔR^2
Step 1				.14	.14***				.16	.16***
Constant	5.12***	0.98				7.74***	1.58			
Age	0.05	0.06	0.06			-0.25**	0.09	-0.17		
SES	0.12	0.10	0.08			0.39*	0.16	0.15		
Female	0.00	0.14	0.00			-1.02***	0.23	-0.28		
Minority group	-0.80***	0.14	-0.35			-0.35	0.23	-0.10		
Step 2				.38	.24***				.44	.28***
Constant	2.68**	0.89				4.02**	1.37			
Age	0.05	0.05	0.06			-0.24**	0.08	-0.16		
SES	-0.00	0.09	-0.00			0.17	0.14	0.07		
Female	0.11	0.13	0.05			-0.91***	0.20	-0.25		
Minority group	-0.64***	0.13	-0.29			-0.34	0.20	-0.93		
Mother short-time work	0.31	0.21	0.08			-0.57	0.33	-0.93		
Father short-time work	-0.03	0.17	-0.01			0.69**	0.26	0.14		
Mother home-office	0.24	0.20	0.07			-0.25	0.30	-0.04		
Father home-office	-0.16	0.20	-0.05			-0.76*	0.30	-0.14		
Current family climate	0.35***	0.05	0.41			0.65***	0.08	0.46		
Student-teacher communication	0.16***	0.04	0.21			0.16*	0.07	0.13		

Note. 0 = no short-time work, 1 = short-time work. 0 = no home-office, 1 = home-office.
*$p < .05$. ** $p < .01$. *** $p < .001$.

Discussion

The COVID-19 pandemic and the resulting infringements of day-to-day life call for research that speaks its societal impact. Families have been especially affected by the measures taken up to slow the spread of the virus, such as school closures, home-learning and work-related changes, yet little research has actually been able to consider how and under which circumstances these changes affect adolescent adjustment. Our longitudinal study was able to track different trajectories of adjustment outcomes for ethnic minority and majority adolescents before and during the period of school closure and home-learning in Germany. Furthermore, we were able to consider specific aspects of the HLE as key explanatory variables of these different trajectories and show how pandemic-related familial variables help to ensure a beneficial HLE even in this stressful and dynamic life situation.

Specifically, our results clearly demonstrated that the shift to home-learning during the pandemic marked out different trajectories in academic self-efficacy and life satisfaction for ethnic minority and majority adolescents. Whereas ethnic minority adolescents reported stable academic self-efficacy and a decrease in life satisfaction, ethnic majority adolescents reported stable life satisfaction and even an increase in academic self-efficacy. Learning conditions (e.g., access to own computer, ability to withdraw into an own learning space, etc.), as one component of the HLE, were able to account for the different trajectories of minority and majority adolescents. Parental involvement, the other component investigated in our study, did not explain these differences, although it was itself important for adjustment outcomes in both groups. Additional analyses showed that HLE improved with specific pandemic-related familial factors: learning conditions were associated with family climate and the student-teacher communication during the pandemic, whereas parental involvement during the pandemic was associated with work-related changes and family climate. Our findings not only underline the central importance of the family as a developmental context during adolescence, but also point to its role as a context where adolescents develop academically even when the school context temporarily falls away. Thus, our findings suggest that strong families are especially important for adolescent psychological and school adjustment in times of crisis (Suárez-Orozco et al., 2018).

At first sight, the different trajectories we uncovered may appear surprising - particularly the increase in academic self-efficacy before and during the pandemic among

majority adolescents. One explanation for this unexpected finding can be seen in research demonstrating that potentials and resources present in minority families are not capitalized upon in the same way as is the case for majority families who are perceived as closer to and more involved in the educational process even when levels are objectively the same (e.g., Crosnoe & Ansari, 2015). In line with these results, we found student-teacher communication to be a decisive factor for navigating home-learning during school closures and it was also a factor that differed between ethnic minority and majority families. Hence, majority families seemed better at translating student-teacher communication (e.g., they master the language of the school instruction) into beneficial learning conditions even to the extent that their adolescents increased in academic self-efficacy. That is not to say, however, that ethnic minority families were unsuccessful in navigating the unexpected shift to home-learning during the pandemic. On average, minority adolescents did not decrease in academic self-efficacy, which shows that minority parents were able to offer their children support in adapting to the pandemic-related changes compensating for the loss of the teacher-led instruction.

Contrary to previous studies (Lien et al., 2001; Brenick et al., 2012) and our expectations, we obtained no significant differences between groups regarding SES and parental involvement. This may be due to the recruitment from comprehensive schools only, where families, regardless of ethnic background, tend to share similar socioeconomic background characteristics (Baumert et al., 2003). Thus, future studies should consider other types of schools or more specific measures to uncover SES differences between ethnic groups. However, SES was a significant predictor in explaining parental involvement, a facet of the home learning environment. It might be that, in families with a better financial situation, parents are exposed to less pandemic-related concerns and, thus, have the possibility to be more actively involved with their children's learning.

Our regression analyses further showed that the pandemic-related changes in the situation of families (short-time work or home-office of fathers) affected the HLE. However, effects were not always negative - as was the case for fathers working in home-office. If fathers were not occupied with work-related tasks (i.e. short-time work), adolescents perceived more parental involvement, a finding that underscores the importance of parents' active role in motivating children, helping them to stay focused on the school tasks and to acquire basic academic skills in school subjects (Scott-Jones, 1995). Parental involvement, while an important predictor in its own right, could not, however, explain the decrease in life

satisfaction among minority adolescents compared to majority adolescents. Hence, it seems to be of similar effectiveness in supporting life satisfaction and academic self-efficacy in both groups. Previous research indicated that the school environment (teacher support, peer relationships), and not parental involvement may have the strongest influence on minority adolescents' life satisfaction (Walsh et al., 2010). Thus, it might be that the decreasing levels in life satisfaction for ethnic minority adolescents are due at least in part to the pandemic-related disconnection from their school community.

Strengths, Limitations, and Future Directions

Longitudinal, comparative data can address research questions regarding the impact of the COVID-19 pandemic on adolescent adjustment. Our analyses were based on data gathered before the onset of the pandemic and during the school closures, and thus provided insights into how adolescents can be supported from both parents and teachers when a shift from school-learning to home-learning occurs. Moreover, we were able to compare the trajectories of ethnic minority and majority adolescents and consider potential explanations for these distinctions.

Nevertheless, our study also has several limitations. One limitation is that all participants in our study attended the same type of school. Future research may take into account other school types in order to generalize these results to other school settings. Another limitation is that our outcomes (life satisfaction and academic self-efficacy) correlated with each other, which may suggest that they are two similar constructs (see Table 2). However, the results found for these two outcomes were different, indicating that they are also able to reflect different processes. Some limitations are linked to the nature of conducting research during a pandemic, which limited the scope of our scientific methodology: The nationwide school closures precluded the inclusion of a control group of adolescents who were not affected by the pandemic. Also, as access to schools was impossible during lockdown, we had to change from paper-pencil administration to online assessments across waves. Nevertheless, paper-pencil and online assessments have been found to reach similar results (Joubert & Kriek, 2009) so that it is unlikely that the clear pattern of findings is the result of measurement bias, which would have been less systematic and more random. In addition, we opted for short measures in the online assessments to keep up our participants' motivation. Fortunately, our scales met the quality criteria in the analyses performed.

A limitation that is unrelated to the pandemic regards the number of constructs we assessed. For theoretical reasons, we studied only learning conditions and parental involvement as facets of the HLE. Of course, many more potential variables could have been included (e.g., structural discrimination, expectations etc.) in research on ethnic majorities' and minorities' academic self-efficacy and life satisfaction. Future research may, for instance, profit from comparative approaches that also differentiate between developmental and acculturative processes in explaining educational outcomes (Titzmann & Lee, 2018). In addition, the two facets of the HLE, learning conditions and parental involvement, can be criticized as being related constructs. The correlation in Table 2 shows, however, that these two facets share only about 12% of their variance, which means that both facets are related, but different aspects the HLE. Nevertheless, future research may profit from including more aspects of the HLE, such as help from siblings or private lessons.

Practical Implications

Our study advances the idea that home-learning can only function when all the involved actors in the school context are taking action and the required equipment for virtual learning is available. The school closures due to the COVID-19 pandemic uphold (and possibly exacerbate) previously existing educational disparities in ethnic minority families, who are often also less technologically equipped and adept. A first implication is therefore that governments need to acquire and provide access to internet and digital resources to all families regardless of background. Policymakers are likewise called to immediate and target-oriented engagement regarding digitalization and equal distribution of resources, such as a fast internet connection for all children.

Further, on the school level, school directors may contribute by requesting and advocating for the necessary technological equipment and learning resources for their teaching staff, but also by organizing training courses regarding digitalization for teachers as well as parents, so that all families are able to help their children to achieve learning progress at home. Teachers should know that minority and majority parents are motivated to support their children, as can be seen in the similarities in parental involvement irrespective of group membership. However, as learning conditions proved to be the most important facet of the HLE, and explained the disparities found between ethnic groups, the provision of digital and non-digital resources during home-learning is fundamental. A lot may be gained if schools provide electronic devices (such as tablets or laptops) on loan to students, but other learning materials, such as worksheets or books are equally important so as not to exclude those

without easy access to the internet or appropriate learning devices. For children in particularly challenging circumstances, schools should be prepared to allocate a continuous dedicated space and support for learning, revision and homework.

Furthermore, our results highlight the importance of good communication between parents and teachers during home-learning. Especially in the context of a crisis, a strong connection to school can reduce the struggles families face at home. Parents would also benefit from instructional support and guidance regarding home-learning activities. Thus, families and teachers should both try to communicate more than usual during school closures by making use of easily accessible devices and sources, such as mobile phones, e-mail or school platforms. Equally, parent-teacher communication will be most effective if it is culturally responsive and based on a solid understanding of varying communication strategies. We are convinced that a move to more modern, technology supported teaching and educating is the answer to reducing ethnic group-based disparities during a pandemic and beyond, extending to other challenging situations (e.g., parental job-loss; multi-children families) and sources of educational disparities.

4. Study 2: Relationship Quality in Student-Teacher-Dyads: Comparing Student and Teacher Determinants in Multicultural Classrooms

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Abstract

Teacher-student-relationship quality is associated with academic success and, among minorities, it can protect against discrimination effects. However, most research has studied student or teacher reports only and rarely accounted for ethnic classroom heterogeneity. This study investigated teacher-student-agreement on relationship quality in minority and majority student-teacher-dyads and tested predictors of relationship quality in adolescence. The sample comprised 309 minority (M_{age} = 12.99) and 200 majority adolescents (M_{age} = 13.50) and their 28 majority teachers (M_{age} = 45.82). Teachers reported higher relationship quality than students. Correlations in student-teacher-dyads were similar for minority and majority students. A better school climate, teachers' awareness of social heterogeneity and culturally responsive teaching predicted relationship quality in student reports, whereas teaching enjoyment predicted relationship quality in teacher reports. In minority dyads, higher student SES and lower levels of discrimination were additional predictors. Findings suggest different processes in how minority and majority student-teacher-dyads evaluate relationship quality.

Keywords: teacher-student-relationship, adolescence, student-teacher-dyads, classroom diversity, multicultural education

Relationship Quality in Student-Teacher-Dyads: Comparing Student and Teacher Determinants in Multicultural Classrooms

Research has highlighted the importance of positive teacher-student-relationships over time: higher levels of relationship quality predict numerous positive academic outcomes for students, such as school belonging, school engagement and academic achievement (Engels et al., 2021; Roorda et al., 2017). Especially for ethnic minority students, having a good relationship to their teacher has been found to protect against the effects of perceived discrimination (Civitillo et al., 2021) and to increase school liking (Murray et al., 2008). Consequently, a solid relationship between teachers and students seems a prerequisite for academic success. The processes that contribute to a high relationship quality, however, have rarely been investigated.

Due to the many beneficial outcomes, teacher-student relations and particularly the teacher-student-relationship quality has gained a lot of research interest from different theoretical standpoints, such as attachment theory (Verschueren & Koomen, 2012), social referencing (Ten Bokkel et al., 2021), need fulfilment (Ryan & Deci, 2000), and social learning (Bandura & Walters, 1977). The extant research includes general processes relating to teacher-student-relationships (especially in early ages of development), but also more specific aspects due to characteristics of increasingly multicultural classrooms, developmental processes in adolescence, and the inclusion of a dyadic perspective. However, the intersection of these different lines of research requires further investigation. Hence, the goal of this study was to examine processes related to relationship quality in minority and majority student-teacher-dyads.

Our study aimed to address three important research gaps regarding teacher-student-relationships in order to better understand how teacher-student-relationships are built and sustained in diverse classrooms. First, most results are based on single-informant reports from either teachers' or students' perspectives (Choi & Dobbs-Oates, 2016; Thijs & Koomen, 2009), which may limit the interpretation of findings. Developmental Systems Theory (DST; Pianta et al., 2003) suggests that the teacher-student relationship is a system embedded in different contexts, where teachers and students are permanently interconnected. Teachers' and students' perspectives are, however, not necessarily in alignment. Students focus more often on general classroom characteristics (e.g., quality of interactions in the classroom;

Walker & Graham, 2021), whereas teachers tend to rely on students' positive and negative behavior (de Ruiter et al., 2019). In addition, teacher and student individual characteristics, expectations, and previous reciprocal encounters are related to the perceptions toward one another (Pianta et al., 2003). Therefore, next to individual characteristics, which influence interactions in general, this study aims to investigate predictors that go beyond the mere perceptions of students and teachers and capture the role of the interpersonal culture of the classroom and school on teacher-student relationship quality.

A second research gap relates to students' age. Studies investigating relationship quality from a dyadic perspective (Choi & Dobbs-Oates, 2016; Prewett et al., 2019; Zee & Koomen, 2017) focused on children below the age of 13. However, in comparison to younger children who may rely on their teacher to provide safety and care, adolescents may report other needs, such as perceived support and utilization, due to their autonomy development and the increased importance of peers in their lives. At the same time, the biopsychosocial changes in adolescence have the potential to affect conflict with teachers and/or disaffection with school (Yu et al., 2018). Thus, focusing on dyadic teacher-student-relationship quality among adolescents could identify novel age-specific processes.

The third research gap refers to the heterogeneity of experiences in multicultural classrooms and how these relate to teacher-student-relationship quality. Classrooms today are increasingly culturally diverse: 40% of all children under 5 years in Germany (tomorrow's adolescents) have a migration background (Statistisches Bundesamt, 2020). In addition to general processes related to teacher-student-relationships, which affect both minority and majority student-teacher-dyads, it is likely that relationship quality will be affected by cultural and minority-specific challenges and resources. Minority students are still at a higher risk of lower academic achievements and lower levels of school belonging than majority students (Organization for Economic Co-operation and Development [OECD], 2019), but also often have a larger extended family as source for support. Concurrently, majority teachers feel less efficacious in teaching minority than majority students (Geerlings et al., 2018) and research showed that students with a minority background experience less warmth and more conflict in their relationship trajectories with teachers than their majority counterparts (Spilt et al., 2012). Hence, compared to majority student-teacher-dyads, relationships in dyads that include minority students may be perceived as less supportive and more conflictual.

To fill in these research gaps, we firstly investigated how secondary school students and their classroom teachers perceive relationship quality. Secondly, we examined the

contribution of school, classroom and individual characteristics in predictions of teacher and student reports of relationship quality. Thirdly, we compared minority and majority student-teacher-dyads to evidence similarities and/or differences between these groups. Our study is unique because it compares student-teacher-dyads based on students' reports about their classroom teacher and on teachers' reports for each student in their classroom. This multi-informant perspective reveals a more nuanced picture of the dynamics in student-teacher-dyads. The study was conducted in Germany where about 99% of teachers have a German citizenship (Statistisches Bundesamt, 2020).

Teacher-Student-Relationship Quality in Adolescence

The teacher-student-relationship quality is a multidimensional construct that can be operationalized through many facets, such as closeness, empathy, support, conflict or respect. We studied instrumental help and conflict because research has shown that teacher-student-relationships change once students enter the middle school, with increased potential for conflict due to growing autonomy (Ettekal & Shi, 2020; Hughes & Cao, 2018; Jerome et al., 2009) and a need to receive instrumental support while actively pursuing goals (Wentzel, 2004). Instrumental help refers to the extent to which the teacher provides additional advice when the student needs it or asks for a helping hand. It reflects the positive experiences in the teacher-student-relationship. The negative experiences are exemplified by teacher-student conflict, which is characterized by mutual frustration and anger. Both dimensions, instrumental help and conflict, form separate dimensions of the teacher-student-relationship construct and have been found to predict students' academic achievement (Ang, 2005).

Our first aim was to investigate how students and teachers perceive relationship quality. In general, teachers' reports are more positive than students' reports in school-related aspects (Conderman et al., 2003), which also include relationship quality (Zee & Koomen, 2017). One explanation for this difference could reside in teachers' perceptions about interpersonal behavior that is marked by their ideals (Wubbels et al., 1992) and ego-enhancing biases (Nisbett & Ross, 1980). These biases can be assumed to be independent of students' minority or majority background. In contrast to teachers, students' views of relationship quality have been found to be based, at least partly, on mechanisms related to (perceived) teacher characteristics and behavior. For instance, students reported a better relationship quality with female teachers, teachers with less experience and teachers showing prosocial behaviors (Prewett et al., 2019; Zee & Koomen, 2017). Furthermore, besides shared

predictors for better relationship quality (female students, higher socioeconomic status (SES), higher age), teachers based their report on students' externalizing and internalizing behavior (Zee & Koomen, 2017).

Furthermore, ratings of relationship quality are likely to be affected by students' ethnic group status. As compared to majority groups, minority groups face additional challenges (e.g., discrimination, lower socioeconomic standing, and prejudice based on status and religious orientation; Agirdag et al., 2012), which can affect teacher-student-relationship quality. A recent 3-year longitudinal study showed that teacher-student-relationship (teacher support and rejection) trajectories show similarities and differences between ethnic minority and majority students (Baysu et al., 2021). Importantly, only minority students experienced increasing-negative trajectories, qualified by moderate support and low-increasing rejection. These results underline the need to investigate relationship quality among minority and majority student-teacher-dyads.

Determinants of Relationship Quality in Student and Teacher Reports

We drew on multicultural education theory (Banks, 2009) to investigate individual- and school-related predictors of relationship quality in multicultural classrooms. Multicultural education theory suggests that the integration of cultural and social issues while teaching and an empowering school environment may be important assets for establishing positive interactions in diverse settings. This theory can predict teacher-student-relationship quality for student and teacher reports alike.

For students, we considered the perceived interethnic school climate, culturally responsive teaching (CRT) and ethnic discrimination. These factors describe different levels of the school environment (Bronfenbrenner, 1979) and may determine how students perceive relationship quality. At the school level, positive interethnic school climate suggests that teachers, school staff, and school management strive to treat all students fairly and encourage interethnic friendships. School climate can either be seen as comprising all individual relations or, as structural characteristics of the school environment that shape the perceptions of different individual relations (Goldsmith, 2004). In this study, we adhere to the latter assumption. Recent research shows that students who perceive their school as an environment which stresses the importance of equality values, also show better relationship quality over time (Baysu et al., 2021).

At the classroom level, we considered whether and how teachers acknowledge culture while teaching. CRT refers to teachers' engagement with students' culture while teaching (e.g., speaking about contributions that students' cultures have made to a particular subject or helping students know more about other cultures; Gay & Howard, 2000). CRT has been associated with increased teacher support (Dickson et al., 2016), improved academic achievement (Aronson & Laughter, 2016) and was assumed to be beneficial for both minority and majority students (Byrd, 2016).

At the personal level, we investigated ethnic discrimination as one of the major challenges minority students may face in the school environment. Students' feelings of relatedness and belonging are essential for positive school adaptation (Ryan & Deci, 2000) and, perceiving discrimination from teachers (e.g., feeling excluded, being punished more often than others) may be particularly disruptive for building positive relationships because teachers are seen as attachment figures and role models by young people (Benner & Graham, 2013; Byrd & Andrews, 2016).

For teachers, multicultural education theory (Banks, 2009) suggests that in order to successfully teach cultural diverse students and build positive relationships, teachers ought to be interested in their students' social realities and discuss social inequities in the classroom. A mixed-methods study among ninth graders indicated that when teachers acknowledged social status differences in the classroom, relationship quality and students' academic adjustment improved (Gaias et al., 2020). Thus, we considered how teachers' awareness of social status differences affects teacher-student-relationship quality as a first factor. Furthermore, the teachers' professional competence model for teaching in multicultural classrooms (Hachfeld et al., 2012) argues that motivational orientations, such as enjoyment, may improve teachers' behavior while teaching and consequently students' school adjustment. For instance, enjoyment while teaching was a feature of high mastery classes and helped maintain positive teacher-student-relationships (Patrick et al., 2001). Thus, we considered teachers' enjoyment as a second factor in their assessment of relationship quality in diverse classrooms.

Based on the aforementioned theoretical positions and findings, we expected teachers to report higher levels of relationship quality than students for both minority and majority student-teacher-dyads (H1a). Furthermore, we expected the differences in the mean levels for student- and teacher-reported instrumental help and conflict to be larger in student-teacher-dyads with minority as compared to majority students (H1b). Similarly, because of greater cultural and economic synchrony between majority students and their teachers (e.g., teacher-

student ethnic match in schools, similar resources), we expected a higher relationship quality agreement in majority as compared to minority student-teacher-dyads (H2). Moreover, we expected teacher-student-relationship quality to be predicted by a positive student-perceived interethnic school climate and higher levels of student-perceived CRT in students' reports (H3a); and by higher teachers' awareness of social heterogeneity and higher enjoyment in teachers' reports (H3b). We expected these associations in minority and majority student-teacher-dyads. Among minority student-teacher-dyads, student perceived discrimination was expected to predict lower levels of relationship quality in students' reports (H3c).

Besides these predictions, past research indicated that certain variables need to be controlled for to avoid misinterpretations due to hidden heterogeneity affecting associations. Teachers reported higher relationship quality toward girls, students in lower grades and students with a higher SES, while students in lower grades and with a higher SES also reported higher relationship quality (Zee & Koomen, 2017). Boys, who usually show more externalizing behavioral problems than girls (Ogden et al., 2021), were expected to assess relationship quality more negatively. Results on teaching experience are unclear: while some research highlights its importance (Chen & Phillips, 2018), other research found small to no effects on teachers' or students' reports (Choi & Dobbs-Oates, 2016). Thus, we controlled for students' gender, school grade, SES and teaching experience. Additionally, we controlled for generation status in the minority dyads as a migration-specific predictor.

Method

Participants

Data were collected in a project on parent-teacher-interactions of ethnic minority and majority adolescents. The research was supported by funds of the "Niedersächsiches Vorab" made available by the Ministry for Science and Culture in Lower Saxony, Germany. Inclusion criteria to participate was students' grade (6^{th} to 10^{th} grade) and school type. We specifically chose to recruit participants from integrated comprehensive schools (*Integrierte Gesamtschule*), because this type of school showed an increase in the percentage of ethnic minority adolescents compared to other school types in Germany (from 13.3% to 22.4%) during a ten-year period (Statistisches Bundesamt, 2018), and it includes different school tracks that offer the possibility to achieve all school leaving certificates available in Germany, from vocational to university qualification.

The sample comprised 309 minority and 200 majority student-teacher-dyads from 28 classrooms. Minority students (46% female) were slightly, but significantly younger than majority students (49% female) ($M_{ethnic\ minority}$ = 12.99, *SD* = 1.30; $M_{ethnic\ majority}$ = 13.50, *SD* = 1.56). There were no significant differences regarding SES ($M_{ethnic\ minority}$ = 4.07, *SD* = 0.84; $M_{ethnic\ majority}$ = 3.95, *SD* = 0.77). The largest minority groups were of Arab- (12%), Turkish- (12%) and Balkan- (6%) heritage and 23% of the ethnic minority adolescents were first-generation immigrants (*M* = 5.53, *SD* = 3.38 length of residence in Germany). Teachers (*N* = 28) were all classroom teachers (M_{age} = 45.82, *SD* = 11.50, 80% female) with a teaching experience ranging from 3 to 40 years (*M* = 16.78, *SD* = 11.07). All teachers had German citizenship. Two teachers were first-generation immigrants (with origins in Ukraine and Iran), resident in Germany for 20 and 23 years, while the other three teachers had one parent from Italy, Poland and South Korea). [1] All teachers were considered to belong to the majority culture because they shared a similar power status, similar educational paths in the German university settings, and similar experience in the German school system. We only divided the student sample into ethnic minority and majority.

Measures

Teacher-student-relationship quality

Relationship quality was assessed with the Teacher-Student-Relationship Inventory (Ang, 2005). The items were measured on a 7-point Likert scale from 1 (*almost never true*) to 7 (*almost always true*) and adapted to the respondent (teacher or student). Students reported on their classroom teacher and their classroom teacher reported on each student in their class. The items covered instrumental help (e.g., “If the student has a problem at home, he/she is likely to ask for my help.” and “If I have a problem at home, I would ask my teacher for help.”; 4 items) and conflict (e.g., “This student/teacher frustrates me more than most other students/teachers in my class.”; 4 items). The reliability for the student version was α = .75 for instrumental help and α = .68 for conflict and for the teacher version was α = .91 for instrumental help and α = .86 for conflict.

[1] To ensure that results were not biased by teacher generation status, we reran the analyses without these teachers. Findings did not change by excluding these five teachers.

Student-perceived interethnic school climate

Interethnic school climate was assessed with the School Interracial Climate Scale, which consisted of two subscales: Supportive Norms and Equal Status (Green et al., 1988). We adapted the items to the reality of German schools where ethnic diversity outweighs racial diversity. Eleven items (e.g., "Teachers at this school are fair to all students regardless of their ethnic background.") were measured on a 7-point Likert scale from 1 (*completely disagree*) to 7 (*completely agree*). The scale's reliability was α = .87.

Student-perceived CRT

CRT was measured with the Cultural Engagement Subscale from the Culturally Responsive Teaching Scale (Dickson et al., 2016). Seven items (e.g., "My teacher helps students learn about other students and their cultures.") were measured on a scale from 1 (*never*) to 7 (*always*). The scale's reliability was α = .86.

Student-perceived ethnic discrimination

Ethnic discrimination was assessed with the Perceived Discrimination Scale (Wong et al., 2003). Minority students reported how often they lately experienced negative treatment from their classroom teacher because of their ethnicity. Four items (e.g., "How often do you think that your classroom teacher rates you more harshly because of your ethnicity?") were measured on a scale from 1 (*never*) to 5 (*every day*). The scale's reliability was α = .87.

Teachers' awareness of social heterogeneity

We developed three items to assess teachers' engagement with students' social background while teaching. Items were rated (e.g., "I help my students to better understand other students' life situations.") on a 7-point Likert scale from 1 (*never*) to 7 (*always*). The scale's reliability was α = .70.

Teachers' enjoyment

Teachers' enjoyment was assessed with the Teacher Emotions Scale (Frenzel et al., 2016). Four items (e.g., "I often have reasons to be happy while I am teaching these students.") were measured on a 7-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The scale's reliability was α = .88.

Control variables

We introduced student's gender, grade, SES and teachers' experience as control variables in all regression models. Gender and grade were assessed by answering simple questions. SES was measured by asking adolescents about their opinion regarding their family's financial situation based on 5-response options, from 1 (*very bad)* to 5 (*very good*), while teachers' experience was measured in years of teaching. Generation status was measured based on whether the students were (*second generation*) or were not born (*first generation*) in Germany.

All scales were in German, the school's general language of instruction. Higher scores indicate higher levels of the measured construct.

Procedure

The study was approved by the University's Ethics Committee, the regional school authority and school directors. Participants were informed about the study beforehand (i.e., study's purpose, voluntary participation and the means of withdrawal at any time without any consequences) and completed paper-pencil questionnaires (from June to October 2019) in the classroom, supervised by trained research staff. Parents gave consent for their children. Teachers were asked to fill in both a general and an additional questionnaire regarding their relationship quality with every student in their class. Due to the extra workload, teachers were given the opportunity to send the questionnaires back by post later on. Students received a 10€ voucher for the participation.

Data Analysis

To test for H1a and H1b we first established scalar measurement invariance for minority and majority dyads on instrumental help and conflict and then tested for group mean differences. The level of congruence between teacher and student reports was tested by strength of the bivariate Pearson correlational associations (H2). Predictors of teacher-student-relationship quality were tested using two-level regression analyses to account for the nested data (Level 1 = students nested in Level 2 = classrooms). To maintain greatest possible parsimony, four individual regressions were conducted for instrumental help as outcome (two per informant per group: minority and majority student-teacher-dyads) and

same four regressions for conflict as outcome (H3a, b, c). All analyses were conducted in M*plus* 8. The few values missing (10% in perceived discrimination and between 2% and 7% for the other scales) were replaced using the full information maximum likelihood procedure (FIML). In the two-level (individual, class) regression analyses, data on two Level 2 predictors were missing: teachers' awareness of social heterogeneity and teachers' enjoyment. Thus, only 26 clusters were included in the analyses. The continuous predictors were grand mean centered and the dummy predictors were left in raw metric (Enders & Tofighi, 2007). Model fit was assessed with the comparative fit index (CFI), Tucker-Lewis-Index (TLI), and root mean square error of approximation (RMSEA). Acceptable fit indices were CFI and TLI ≥ 0.90 and RMSEA ≤ 0.08 (Schermelleh-Engel et al., 2003). We also report the SRMR index, but we did not use it to inform our decision about model fit. In smaller samples, larger SRMR values occur frequently as there is less certainty in the sample which contributes to larger SRMR values so that models can be considered well-fitting even if the SRMR exceeds 0.80 (Asparouhov & Muthén, 2018).

Results

Mean Differences and Agreement between Minority and Majority Student-Teacher-Dyads (H1a, H1b, H2)

The descriptive statistics and bivariate correlations are depicted in Table 1. In order to test for mean differences between informants and ethnic groups (H1a, b), we conducted measurement invariance models (configural, metric, scalar) for both outcomes (teacher-/student-perceived instrumental help and teacher-/student-perceived conflict) and both groups within a multilevel multi-group CFA. As our data was hierarchically structured (students nested in classrooms), we had to correct for data dependency at Level 2. Therefore, the pseudo maximum likelihood (PML) estimator implemented in M*plus* (Asparouhov & Muthén, 2005) was used to correct for effects of dependencies of observations within classes. We allowed for a correlation between items 1 and 3 in the instrumental help model, and between items 1 and 4 in the conflict model, as these were very similar in terms of content (asking for teachers' help and being angry with each other). Scalar measurement equivalence was obtained for both outcomes. The final model fit indices for instrumental help were: CFI = .952, TLI = .936, RMSEA = .068 (90% C.I. = .049-.088), SRMR = .087, χ^2 (42) = 92.04, p < .001, while the indices for conflict were: CFI = .943, TLI = .924, RMSEA = .063 (90% C.I.

= .044-.083), SRMR = .106, and χ^2 (42) = 84.77, $p < .001$, indicating an acceptable fit for both dependent variables. The model fit indices for the configural and metric models are in the supplemental material. Teachers reported more requests for instrumental help than students and minority students were more likely to ask teachers for help than majority students. Regarding conflict, teachers reported lower levels of conflict than students and, additionally, minority students reported higher levels of conflict than majority students. Hence, H1a was supported because teachers reported better relationship quality than students. H1b was not supported because the mean level differences were larger in the majority than in the minority dyads (see Table 2).

Table 1

Bivariate Correlations between Study Variables

	M (SD)	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Student determinants															
1. Female	-	1													
2. Grade	7.74 (1.32)	.02	1												
3. SES	4.02 (.82)	.04	-.11*	1											
4. Minority group	-	-.03	-.22**	.08	1										
5. Second generation	-	-.06	-.03	-.00	-.02	1									
6. Perceived interethnic school climate	5.01 (1.18)	.16**	-.11*.	.19**	.08	-.02	1								
7. Perceived CRT	3.30 (1.35)	.06	.09	.11*	-.06	-.06	.36**	1							
8. Perceived discrimination	1.41 (.80)	-.26**	-.26**	.00	.22**	-.04	-.17**	.09	1						
Teacher determinants															
9. Teaching experience (in years)	16.78 (11.06)	-.02	.07	-.01	.13**	-.06	.02	.02	-.04	1					
10. Awareness of social heterogeneity	5.34 (.88)	-.02	-.07	.04	-.01	.02	.04	.02	-.07	-.40**	1				
11. Enjoyment while teaching	5.84 (.80)	-.03	.17**	-.10*	-.18**	.01	-.08	-.06	-.21**	.14**	-.06	1			
Teacher-student relationship quality															
12.Student-reported instrumental help	3.64 (1.53)	.08	-.16**	.18**	.02	-.02	.42**	.35**	.00	-.18**	.19**	-.08	1		
13.Student-reported conflict	2.75 (1.38)	-.11*	-.08	-.04	.16**	-.04	-.26**	-.04	.30**	.19**	-.21**	.00	-.33**	1	
14.Teacher-reported instrumental help	4.31 (1.35)	.17**	-.04	.01	-.14**	.04	-.03	.03	-.03	-.25**	.13**	.17**	.11*	-.02	1
15.Teacher-reported conflict	1.57 (1.02)	-.16**	-.22**	-.07	.16**	-.01	-.15**	-.07	.30**	.24**	-.30**	.01	-.12**	.26**	-.32**

Note. *$p < .05$. ** $p < .01$. *** $p < .001$. (two-sided) Female = 1, Male = 0. Minority group = 1, Majority group = 0. Second generation = 1, First generation = 0.

To examine our hypothesis that teacher-student agreement would be higher in majority than in minority dyads (H2), we correlated the dyad scores. Across the whole sample, and against our expectations, we found a small agreement in instrumental help among both majority: r (200) = .15, p = .177 and minority: r (309) = .18, p = .009 student-teacher-dyads. Regarding conflict, we found a medium agreement for both ethnic groups, r (309) = .28, $p < .001$ for minority and r (200) = .25, $p < .001$ for majority student-teacher-dyads. Fischer's Z-tests revealed no significant differences in the strength of associations between minority and majority student-teacher-dyads, Zs ≤ .35, ps ≥ .63. Thus, H2 had to be rejected.

Table 2

Mean Differences for Relationship Quality

Outcome	Majority Dyads		Minority Dyads	
	Student	**Teacher**	**Student**	**Teacher**
	M (SD)	*M (SD)*	*M (SD)*	*M (SD)*
Instrumental Help	**1.94** (0.12)	**3.42** (0.36)	**2.02** (0.15)	**3.14** (0.34)
Conflict	**2.91** (0.47)	**1.81** (0.21)	**3.22** (0.41)	**2.10** (0.16)

Determinants of Relationship Quality in Minority and Majority Student-Teacher-Dyads (H3a, b, c)

To predict relationship quality in student-teacher-dyads we conducted eight two-level regression models for (majority and minority) students' and teachers' reports with instrumental help and conflict as outcomes (see Table 3). Model fit was assessed according to the aforementioned criteria. The fit indices for all models can be found in the supplemental material. The intraclass correlation coefficients (ICCs) for the majority student-teacher-dyads were of medium size for instrumental help (0.14) and large size for conflict (0.24) in students' reports, indicating that 14% and 24% of variance, respectively, was between-classrooms. The ICCs for teachers' reports were large for instrumental help (0.41) and conflict (0.52), indicating 41% and 52% between-classroom variance.

The models for *instrumental help in majority student-teacher-dyads* showed a good model fit. A more positive school climate (β = .40, $p < .001$), higher levels of student-

perceived CRT (β = .25, p < .001) and teachers' awareness of social heterogeneity (β = .60, p < .001) predicted more student-reported instrumental help. Moreover, attending a lower grade (β = -.46, p = .034) was associated with a higher likelihood of asking teachers for help. In teachers' reports, more enjoyment while teaching (β = .48, p = .029) exclusively predicted higher levels of instrumental help. The models for *conflict in majority student-teacher-dyads* also showed a good fit. Lower levels of SES (β = -.15, p = .011), students' lower grade (β = -.56, p < .001) and less awareness of the social heterogeneity in the classroom (β = -.41, p = .001) were associated with more teacher-perceived conflict. A negative school climate was a common predictor in students' (β = -.37, p < .001) and teachers' reports (β = -.24, p < .001) of conflict. Hence, in majority dyads, H3a was fully confirmed for school climate and partially confirmed for student-perceived CRT (only for instrumental help). H3b was partially confirmed for both teachers' awareness and enjoyment.

The ICCs for the minority student-teacher-dyads were small for instrumental help (0.05) and conflict (0.07) in students' reports, indicating that 5% and 7% of variance was between-classrooms. The ICCs for teachers' reports were large for instrumental help (0.47) and conflict (0.22), indicating 47% and 22% between-classroom variance.

The models for *instrumental help in minority student-teacher-dyads* showed a good fit. Having a higher SES predicted higher levels of instrumental help in both students' (β = .14, p = .005) and teachers' reports (β = .17, p = .040). Conversely, a positive school climate (β = .26, p < .001), higher levels of CRT (β = .27, p < .001), attending a lower grade (β = -.58, p = .024) and less teaching experience (β = -.72, p = .032) predicted more instrumental help in students' reports. Teachers reported that girls were more likely to ask for help than boys (β = .26, p = .002). The models for *conflict in minority student-teacher-dyads* showed an acceptable fit for students' reports and a good fit for teachers' reports. A positive school climate (β = -.25, p = .001) predicted lower levels of conflict only in students' reports. Common predictors for higher levels of conflict were higher levels of student-perceived discrimination (β = .24, p = .003 in students', β = .23, p = .022 in teachers' reports), more years of teaching experience (β = .60, p < .001 in students', β = .37, p = .022 in teachers' reports) and lower levels of teachers' awareness of social heterogeneity (β = -.51, p = .040 in students', β = -.42, p = .003 in teachers' reports). Thus, in minority dyads, H3a was fully supported for school climate and partially supported for CRT. H3b was partially supported for teachers' awareness and enjoyment, while H3c was partially supported for perceived discrimination.

Table 3

Two-level Regression Results for Majority and Minority Student-Teacher-Dyads

Variable	Majority Group				Minority Group			
	Instrumental Help		Conflict		Instrumental Help		Conflict	
	Student-Report *B* (SE)	Teacher-Report *B* (SE)	Student-Report *B* (SE)	Teacher-Report *B* (SE)	Student-Report *B* (SE)	Teacher-Report *B* (SE)	Student-Report *B* (SE)	Teacher-Report *B* (SE)
Level 1								
Female	.11 (.06)	**.20 (.08)****	-.07 (.08)	-.16 (.09)	.04 (.07)	**.26 (.09)****	-.03 (.08)	-.11 (.09)
SES	.04 (.05)	-.08 (.05)	-.03 (.08)	**-.15 (.06)***	**.14 (.05)****	**.17 (.08)***	.04 (.07)	-.11 (.08)
Second generation					-.04 (.05)	.00 (.06)	-.04 (.06)	.01 (.06)
Student-perceived school climate	**.40 (.06)*****	-.04 (.09)	**-.37 (.08)*****	**-.24 (.06)*****	**.26 (.07)*****	-.06 (.07)	**-.25 (.07)****	-.05 (.07)
Student-perceived CRT	**.25 (.06)*****	.17 (.11)	.12 (.09)	.03 (.06)	**.27 (.07)*****	.05 (.08)	.06 (.08)	-.01 (.08)
Student-perceived discrimination					-.02 (.06)	.07 (.10)	**.24 (.08)****	**.23 (.10)***
Level 2								
Students' grade	**-.46 (.22)***	-.14 (.19)	-.16 (.20)	**-.56 (.11)*****	**-.58 (.26)***	-.05 (.20)	-.06 (.29)	-.24 (.17)
Teaching experience (in years)	-.04 (.19)	-.19 (.21)	.21 (.20)	.02 (.16)	**-.72 (.34)***	-.34 (.20)	**.60 (.16)*****	**.37 (.16)***
Teachers' awareness of social heterogeneity	**.60 (.14)*****	.33 (.19)	-.31 (.17)	**-.41 (.13)****	.03 (.27)	.07 (.18)	**-.51 (.25)***	**-.42 (.14)****
Teachers' enjoyment while teaching	.33 (.20)	**.48 (.22)***	-.27 (.23)	-.17 (.23)	.20 (.32)	.38 (.21)	.32 (.24)	.02 (.22)
R^2 – Level 1	.34***	.07	.13*	.13**	.25***	.09	.15**	.11*
R^2 – Level 2	.63**	.38*	.28	.55***	.83*	.22	.99**	.46**

Note. *p < .05. **p < .01. ***p < .001. Female = 1, Male = 0. Second generation = 1, First generation = 0.

Discussion

Our study revealed only little to no congruence in the relationship quality of minority and majority student-teacher-dyads, similar to previous research (Gregoriadis et al., 2022; Poulou, 2017; Zee & Koomen, 2017). Based on the Developmental Systems Theory, this difference in perceptions may be driven by teachers' and students' own experiences, appraisals and expectations related to the other within the dyad (Pianta et al., 2003), which was supported by our regression findings. However, despite the lack of agreement, this multi-informant study filled various research gaps by comparatively investigating dyadic data (students' and teachers' perspectives) in ethnic minority and majority student-teacher-dyads during adolescence.

In particular, our study can offer a clearer understanding of students' and teachers' perspectives. First, as found in earlier studies, teachers and students perceived relationship quality differently with teachers rating the relationship more positively. Differentiating between minority and majority students added to these findings, because conflicts between teachers and students were found to be more pronounced in minority student-teacher-dyads (both teacher and student reports) and because teachers reported more requests for instrumental help from majority students. The strength of associations between teacher and student reports, however, did not differ significantly between minority and majority dyads which may also be the result of the rather limited agreement overall. Second, we were able to provide an insight into why the perceptions of students and teachers differ from one another. Besides common predictors (e.g., teachers' awareness of social heterogeneity predicted teachers' and students' reports of relationship quality in both groups), students based their judgment of teacher-student-relationship quality more on global assessments of social relations in school (e.g., school climate), whereas teachers based their assessment more on their own teaching experiences (e.g., enjoyment while teaching). Third, we found differences in the predictions between minority and majority reports (e.g., SES played a more important role for minority dyads), which is an indication of group-specific processes at play.

As expected from our application of multicultural education theory (Banks, 2009), all students reported benefits from interethnic and culturally sensitive environments. A positive interethnic climate predicted higher levels of instrumental help and lower levels of conflict in both ethnic minority and majority dyads. That is, students who perceived that their teachers and school staff treated everyone equally and encouraged forming friendships showed high

levels of relationship quality. This finding adds to previous research: Together with results showing that relationship quality predicts numerous positive academic outcomes (e.g., Engels et al., 2021; Roorda et al., 2017), our findings suggest that relationship quality could be a potential mediator in the empirically established association between a supportive and fair school climate in multicultural schools and higher achievement, academic self-concept and life satisfaction (Schachner et al., 2018). Similarly, students' perceptions of CRT related to their perceptions of instrumental help for both minority and majority dyads. This finding highlights the importance of teacher readiness to incorporate culture as a factor in their teaching and complements previous research (e.g., Dickson et al., 2016) in two ways. First, it confirms the validity of this measure for individual teachers' behavior (here, the classroom teacher), whereas other studies focused on the whole team of teachers. Secondly, it shows a clear association between CRT and instrumental help (instead of teacher support in general), which suggests that perceived CRT may have outcome-specific effects. The result also extends the generalizability of some US research to the German context where research in this area is still at the beginning and where the school environment is substantially different from the US school environment (Civitillo & Juang, 2020). As expected, our data also show that perceiving ethnic discrimination from teachers relates to higher levels of conflict among minority student-teacher-dyads in both reports, while there was no association to instrumental help. Compared to family or peer relationships, the teacher-student-relationship is characterized by an imbalance in power in that the teacher has the authority and is a relevant figure in students' school adjustment. Therefore, it might be that when students feel that their teachers grade them unfairly or punish them more harshly because they belong to a minority group, they may feel helpless, frustrated and angry, a finding previously confirmed (van Bergen et al., 2021).

Finally, though we found no differences in the strength of associations between teachers' and minority or majority perceptions of relationship quality, students' and teachers' perspectives on predictors of relationship quality did differ for minority and majority student-teacher-dyads. For minority students, teachers' experience played a significant role, but not in majority dyads. This finding was counterintuitive: more teaching experience was associated with lower levels of instrumental help and higher levels of conflict in both teacher and student reports. One interpretation might be that teachers who are new in the job may be more enthusiastic and motivated to try innovative teaching methods and improve themselves and their students' learning, while more experienced teachers already chose their strategies to which they hold. Additionally, a recent study associating teachers' experience and teaching

quality showed that more experience does not necessarily equate more competence and beginning teachers can be as competent as experienced teachers (Graham et al., 2020). Therefore, an alternative interpretation might be that younger cohorts of teachers are better prepared for dealing with diverse classrooms – through own experience or better university curricula. This explanation is supported by the fact that teachers' awareness of social heterogeneity (which was negatively correlated with teaching experience) related to lower levels of conflict in both minority and majority dyads and predicted higher levels of instrumental help in majority student reports. Future studies should address effects of teacher experience and teacher cohort in more detail, as this may help to identify points for improvement in teacher training.

Among teacher characteristics, experiencing positive emotions while teaching also played a crucial role in teacher reports on instrumental help, but only for majority dyads. Hence, our results show that enthusiastic teachers, who are enjoying their work, inspire students to ask for help and, therefore, confirm and extend recent research on the benefits of teachers' positive emotions on building fruitful relationships and improving students' adjustment (Frenzel et al., 2021). However, more research is needed to clarify why this finding only applied to majority student-teacher-dyads, or whether the finding for minority student-teacher-dyads in this study was sample-specific (it just missed significance, $p = .06$).

More research also seems advisable with regard to the role of students' SES in teachers' reports. In minority dyads, teachers reported more requests for instrumental help from students with a higher SES, while in majority dyads higher levels of SES led to lower levels of conflict in teachers' reports. These findings are in alignment with a German report on the teaching profession showing that most of the teachers believe that the social class strongly relates to school performance (Vodafone Stiftung Deutschland, 2012). Our results may show that teachers treat students differently depending on their social standing. Future research should address these differences, for example by investigating whether teachers perceive high SES minority children as more similar to themselves, or whether the effect of less teacher-reported instrumental help from low SES minority adolescents is the double penalty through the intersection of two kinds of low social status (minority and low SES) in these adolescents (Murray & Zvoch, 2011). Finally, another interesting result merits comment. We found smaller ICCs in students' reports in the minority group than in the majority group, which indicates that minority students' perceptions of relationship quality vary more on the individual level and less across classrooms than the perceptions of majority youth. This result may have at least two explanations: first, students from ethnic minority

groups may show different needs and ability levels, which leads teachers to offer individual and adapted levels of support and second, as recent research on teaching-related intercultural efficacy shows (Ulbricht et al., 2022), teachers in equality and inclusion-oriented schools may be more inclined to adjust their lessons and teaching behaviour to the socio-cultural background of minority students.

Limitations and Future Directions

Besides strengths (e.g. same relationship quality scale for both informants, measurement invariance established, group comparisons), some limitations have to be considered. First, based on our theoretical assumptions (e.g., Baysu et al., 2021), we assumed that interethnic school climate influences relationship quality. However, relationship quality may also shape the school climate or, school climate and individual relationships may bidirectionally associate. Our cross-sectional study cannot draw a clear line of causation between the concepts tested and we advise future studies to investigate reciprocity. Moreover, given that relationship quality is said to change over time (Ettekal & Shi, 2020), longitudinal studies are needed to investigate how teacher-student agreement and its determinants change across secondary school years.

Second, we investigated only minority and majority dyads. However, certain minority groups are more or less stigmatized by the majority population (e.g., Muslim vs. non-Muslim in Germany, recent vs. established groups; Schwarzenthal et al., 2022), which could impact the relationship quality between teachers and students due to teachers' implicit and explicit biases (Steketee et al., 2021). Therefore, future research may profit from intensive (also qualitative) studies to investigate certain ethnic minority groups in greater detail and to see whether or not results for relationship quality are in alignment with our findings. Furthermore, future research should extend the findings on relationship quality to other school contexts where the teacher-student ethnic ratio is more balanced and further investigate the cultural and socio-economic synchrony between teachers and students. Recent findings already showed that the teacher-student ethnic match associates with higher motivation and student engagement (Rasheed et al., 2020).

Third, our sample included only one single school type. Future studies should examine other types of schools (e.g., as Level 3 factor) in other countries in order to generalize results to other school settings, especially because school characteristics were found to affect student outcomes significantly (Brenick et al., 2012; Goldsmith, 2004). This

may help to explain and contextualize differences in the appraisals within minority and majority student-teacher-dyads. Fourth, we used instrumental help and conflict to measure relationship quality, which captured only two aspects of the complexity of interpersonal relationships between teachers and students during adolescence. It might be interesting for future studies to investigate other constructs, such as trust, empathy or respect. Finally, our study included a small number of teachers (N = 28) and, regarding the multilevel models, data for two classrooms was missing. Thus, the regression results for teachers' enjoyment and teachers' awareness of social heterogeneity are based on a moderate sample. Further investigations with larger numbers of teachers and students (allowing to test multiple indicators in one single SEM framework) should be considered.

Implications for Research and Practice

Despite these limitations, this study improves our understanding of teacher-student-relationship quality in multicultural classrooms and yields valuable implications for research and practice. As regards research, future studies should develop new instruments, and use new approaches to measure relationship quality and obtain additional information on the dyadic processes. For example, including other sources (e.g., peers, parents) or using different methods (e.g., observations, daily diaries) when investigating dyadic relations may help extend and validate findings. As regards practice, our results emphasize the benefits of integrating multicultural education trainings in schools and during the teacher preparation years. Such trainings should raise awareness about the effects of teacher beliefs, expectancy stereotypes (e.g. SES) and perceived discrimination on students' psychosocial outcomes. Moreover, intervention programs may help to encourage classroom discussions about cultural and social differences, as these are relevant topics that shape adolescents' development (e.g. positive interethnic relations), and teachers' professional competence (e.g. improve school to home communication) in modern multicultural schools.

Conclusion

Given that a positive relationship between teachers and students is a prerequisite for academic success, understanding which factors contribute to improving this relationship especially in increasingly diverse schools is of high priority. Our study showed that, besides similarities, students base their relationship quality reports more on global assessments of

social relations in school (e.g., positive interethnic climate), while teachers rely more on their own personal experiences (e.g., enjoyment while teaching). We hope that our findings will encourage school practitioners to promote intercultural relations and build welcoming environments for teachers and students – independent of their heritage.

Appendix 1

Model Indices for Measurement Invariance on Relationship Quality for Minority and Majority Groups

Invariance types	χ^2 (df)	RMSEA (90% CI)	CFI/TLI	SRMR
Instrumental help				
1. Configural	63.75 (28)**	.071 (.048-.094)	.966/.931	.054
2. Metric	77.81 (36)**	.068 (.047-.088)	.960/.937	.082
3. Scalar	92.04 (42)***	.068 (.049-.088)	.952/.936	.087
Conflict				
1. Configural	47.36 (28)*	.052 (.024-.077)	.974/.948	.048
2. Metric	64.85 (36)**	.056 (.033-.078)	.962/.940	.104
3. Scalar	84.77 (42)***	.063 (.044-.083)	.943/.924	.106

Note. CFI = comparative fit index, TLI = Tucker-Lewis-Index, RMSEA = root mean square error of approximation, SRMR = standardized root mean square residual.

Appendix 2

Model Fit Indices for the Two-level Regression Models (students nested in classrooms)

Model	χ^2	*df*	CFI	TLI	RMSEA	$SRMR_{within}$	$SRMR_{between}$
Majority student-teacher-dyads							
Teacher-reported instrumental help	17.93*	8	1.00	1.00	.000	.000	.000
Student-reported instrumental help	77.35***	8	1.00	1.00	.000	.000	.002
Teacher-reported conflict	34.85***	8	1.00	1.00	.000	.000	.000
Student-reported conflict	26.32***	8	1.00	1.00	.000	.000	.001
Minority student-teacher-dyads							
Teacher-reported instrumental help	22.02*	10	1.00	1.00	.000	.000	.000
Student-reported instrumental help	82.43***	10	1.00	1.00	.000	.001	.025
Teacher-reported conflict	28.65**	10	1.00	1.00	.000	.000	.001
Student-reported conflict	53.56***	10	.948	1.00	.000	.036	.038

Note. CFI = comparative fit index, TLI = Tucker-Lewis-Index, RMSEA = root mean square error of approximation, SRMR = standardized root mean square residual.

5. Study 3: Everybody Needs Somebody: Specificity and Commonality in Perceived Social Support Trajectories of Immigrant and Non-Immigrant Youth

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Abstract

Perceived social support can help immigrant youth to deal with developmental acculturation: the simultaneous resolution of developmental and acculturative tasks. This person-oriented three-wave comparative study investigated perceived social support trajectories in two immigrant and one non-immigrant group. We investigated whether similar social support trajectory classes can be found across groups, whether developmental and/or acculturation-related processes predict class membership, and whether social support trajectory classes associate with changes in self-efficacy. The sample comprised 1,326 ethnic German immigrant and 830 non-immigrant adolescents in Germany, and 1,593 Russian Jewish adolescents in Israel (N = 3,749; M_{age} = 15.45; SD = 2.01; 50% female). Results revealed two social support trajectory classes across all and in each group: a stable *well-supported class* and a low but *increasingly-supported class.* Respective to the increasingly-supported class, membership in the well-supported class was associated with commonality in developmental predictors (female gender, high involvement with family and peers) in all groups and specificity in acculturation-related predictors (higher heritage and host culture orientation) in immigrant groups. Patterns of self-efficacy over time matched social support trajectories of both classes in all groups. Findings indicate that stakeholders looking to support immigrant adolescents should be aware of the nuanced coaction of development and migration.

Keywords: adolescence, cross-group comparative research, developmental acculturation, longitudinal person-oriented approach, social support

Everybody Needs Somebody: Specificity and Commonality in Perceived Social Support Trajectories of Immigrant and Non-Immigrant Youth

Researchers interested in the impact of migration on developmental outcomes are tasked with addressing the coaction of general developmental and migration-specific processes and with examining commonality and specificity of findings from different populations (Benbow & Rutland, 2017; Titzmann & Fuligni, 2015; Titzmann & Lee, 2018). This coaction of development and acculturation is based on migrant children's experience of a double transition from childhood to adulthood and across cultures. Social support helps adolescents to master this double transition: it is beneficial for adaptive general development (e.g., Chu et al., 2010) and acculturation (e.g., Crockett et al., 2007; Cuadrado et al., 2017). It is also consistently linked to a multitude of positive mental and physical health outcomes (e.g., Thoits, 2011). Meta-analytic findings point to the conclusion that these positive effects are based on the individual's subjective appraisal that their social network will be helpful and effective when needed - that is their perceived social support or the quality of social support (Chu et al., 2010).

Despite the apparent importance of social support for adolescent adaptation, there has been surprisingly little longitudinal work that considers how perceived social support develops over time. This also holds true for longitudinal research on social support among immigrant adolescents and (correlational or longitudinal) multi-group studies, which can clarify whether immigrant adolescents follow similar social support trajectories for the same reasons and with similar outcomes as adolescents with no recent personal or familial migration history (non-immigrant adolescents). Moreover, extant work has been variable-centered and therefore unable to identify different groups of individuals with different trajectories and developmental mechanisms (Bergmann & El-Khouri, 2003). Addressing these research gaps, our study pursued three aims. Firstly, we wanted to uncover classes of social support trajectories based on longitudinal assessments of perceived social support and compare their number and paths in immigrant and non-immigrant ethnic groups. Secondly, and in line with the rationale of combining acculturation and developmental science, we considered general and migration-specific predictors of social support trajectory class membership (the statistical assignation to a trajectory class) and compared their effects in each ethnic group. Thirdly, we investigated whether social support trajectory class

membership was associated with similar changes in self-efficacy as a psychological adaptation outcome in each ethnic group.

Empirical multi-group comparisons can help to disentangle unique, group- and/or context specific, and universal developmental processes in the transition to adulthood and the acculturation process (Bornstein, 2017; Lerner, 2018; Titzmann & Fuligni, 2015). Their conclusions are particularly compelling if they (a) compare youth without personal or recent familial migration experiences facing developmental changes to youth with an immigrant background coping with both developmental and personal acculturative changes; (b) include within and between country variations to address generalizability across (national) contexts; and (c) employ longitudinal data to track the trajectories of change across time (Benbow & Aumann, 2020). Our research fulfilled these requirements: We studied ethnic German diaspora adolescents who migrated from the former Soviet Union (FSU) to Germany and compared their results with those of two relevant comparison groups. The first, a non-immigrant German group (with German citizenship and no migration history in their own and their parents' generation), captured the experience of adolescents facing developmental but not personal or familial acculturative changes. The second, Russian Jews from the FSU, represented the experiences of migrating to Israel facing similar acculturative changes in a different (national) context. Like ethnic German immigrants, Russian Jewish adolescents are diaspora immigrants, who share a similar cultural background (having lived and been socialized in the former Soviet Union), similar migration characteristics (voluntary, motivated by the search for a better quality of life), and similar social benefits in the country of reception ("repatriate" status, immediate citizenship). Context differences between the groups lie in the dispersion of regional settlement of the immigrants (widely spread in Germany, regionally concentrated in Israel) and in the overall diversity of the countries (very diverse in Israel, rather homogenous in Germany).

Social Support Trajectories in Adolescence

In order to make predictions about social support trajectories in these three groups, it is important to consider the critical importance of changing and increasing social relationships to general development in adolescence and young adulthood (Collins & Steinberg, 2008). At this time in life, establishing behavioral and emotional autonomy from parents, often by forming social ties with friends and romantic partners outside the core family, is a major developmental task (Wrzus et al, 2013). Additionally, social relationships

formed in this period are essential to learning about building and maintaining satisfying, long-lasting relationships - a further developmental milestone (Connolly et al., 2000). Adolescents and young adults may also be particularly motivated to acquire new information from their social relationships, predisposing them to more interactions with novel social partners (Carstensen, 1995). However, in the light of the manifold bio-psycho-social changes happening in adolescence, perhaps the key function of social relationships in this life phase is the provision of emotional, instrumental, and informational social support (Cohen et al., 2000).

Social support has been measured in several ways, including measures of social network size and density, measures of the frequency of received social support (enacted support), and perceived social support. However, the former two measurements have not been consistently linked to positive adaptation outcomes, because network size or density does not equate quality of social support and enacted support may not always be welcomed, may not always meet the needs of individuals, and may reduce self-esteem and self-efficacy (e.g., Chu et al., 2010). Among adolescents in particular, support from adults who think that they are being supportive may be seen as intrusive and counter to their need for autonomy (Rowsell et al., 2016). Perceived social support, on the other hand, is a generalized subjective appraisal that a social network has the capacity to help, incorporating the effectiveness and appropriateness (e.g., the quality) of the social support available (Thoits, 2011). For these reasons, our study focused on perceived social support.

Although the development of new social relationships and the acquisition of new sources of social support can be assumed to be universal developmental tasks in adolescence, it is unlikely that all adolescents follow the same trajectories of change in perceived social support. Longitudinal studies investigating developmental trajectories of perceived social support are, however, scarce. We found only one study, by Holden et al. (2015), which considered longitudinal patterns of perceived social support and their associations to mental health in a sample of young female adults (over a 12 year period from age 22-27 to age 34-39). Their research identified four trajectory classes of social support following the so-called "cattle-grid" pattern (1 stable high group, 1 stable low group, 1 increasing group and 1 decreasing group). It also showed that over time patterns of mental health were consistent with patterns of social support. However, because of the marked age difference (from young adulthood to middle age rather than across adolescence), it remains unclear how much insight into the development of social support in adolescence can be derived from these results - highlighting the need for research in this area. It could be that a similar cattle-grid pattern is

apparent across adolescence. However, given the nature of social relationships in adolescence, decreasing or low trajectories may be less likely than in (young) adulthood: In adolescence, parents remain important providers of support, but additional sources (e.g., peers met in school and during leisure time facing the same developmental task of creating new relationships) emerge, a situation that provides increasing opportunities. Additionally, providing support to children and adolescents is a main objective of the family, school and leisure environments in which adolescents spend most of their time. In this situation, decreasing and low support trajectories appear less likely than in adulthood, when individuals start living independently, start working and found new families, whereby sources and perceptions of social support may change, decreasing in availability and quality (e.g., Wrzus et al., 2013). Thus, we might expect to find two rather than four trajectory classes. Because personal networks and friendship networks are also disrupted and decline in size through migration (Wrzus et al., 2013), increasing social support trajectories might be more likely, and thus represent larger classes, for immigrant adolescents in Israel and Germany than for non-immigrant German adolescents.

General and Migration-Specific Predictors of Social Support Trajectories

Recent years have seen the evolution of developmental acculturation models that explicitly regard the coaction of acculturative and developmental change (e.g., Juang & Syed, 2019; Titzmann & Lee, 2018). They are rooted in well-known approaches to acculturation research, such as the two-dimensional model of Berry (2003), but consider acculturation to be a multi-dimensional and dynamic process situated within specific ecological contexts that is inextricably linked to the normative developmental biological and social changes that occur during the childhood and adolescent years (e.g. Bornstein, 2017; Juang & Syed, 2019; Titzmann & Lee, 2018). This integration of developmental and acculturation science helps to better understand how the coaction of development and acculturation relates to immigrant adolescents' adaptive functioning (Suárez-Orozco et al., 2018).

Thus, following the rational of these models of developmental acculturation, and to thereby address the coaction of general development and migration and generalize across populations regarding social support trajectory classes, we utilized a comparative design that included both developmental and migration-specific predictors (Titzmann & Lee, 2018). The combination of both types of predictors can clarify whether the same general factors predict perceived social support trajectories in immigrant and non-immigrant samples, or whether

acculturation-related variables explain unique variance in social support trajectory class membership after accounting for general developmental factors. Disentangling development from migration processes in this way may also help to pinpoint which actors or processes are particularly relevant for psychosocial adaptation. At the same time, such an approach has the potential to raise new research questions regarding the impact of migration on development and provide insights for stakeholders supporting young people.

General predictors can be derived from theorizing on structural network support (e.g., Thoits, 2011), which outlines that social support can stem from all parts of a person's network, but parents, teachers and peers are amongst the most likely sources for children's and adolescents' support generally (Chu et al., 2010). Research has rarely considered the relative importance of different sources for perceived social support. When it has, there has been some inconsistency: Variable-centered approaches usually showed positive associations between measures of relationship quality from different sources (e.g., Furman et al., 2002), suggesting that adolescents feel either well-supported or not well-supported across sources of support. However, evidence from an emerging person-centered approach shows that, while some adolescent's relationships show convergence (consistent relationship quality across sources), nonconvergence (mixed relationship quality across sources) is also quite typical (Jager, 2011). Nevertheless, this cross-sectional research showed that relationships with parents were particularly important for positive adjustment during adolescence. In the only longitudinal person-oriented investigation of several sources of social support we could find, Ciarrochi et al. (2017) considered profiles of perceptions of social support from parents, teachers, and peers across two measurement time points in secondary school. They identified several fairly stable profiles made up of various combinations of social support sources. However, only 7% of the sample had high social support from at least two sources and 25% of the sample scored below average on perceived support from all three sources. Importantly, the authors found that minority status (being part of an indigenous or ethnic minority group versus "Anglo Caucasian" [*sic*]) did not predict profile membership.

From an acculturation perspective, the same structural factors (family, peers, school) seem relevant for immigrant adolescents. The family network in particular has a predominant role in providing social support in the acculturation process (e.g. Telzer, 2011). It is a known source of information about ethnic culture and heritage, fosters ethnic and racial identity development, and provides a sense of belonging, security and stability (e.g., Hughes et al., 2006). Social support from peers may stem from same-ethnic and cross-ethnic friends. Same-ethnic friends may provide particular support to immigrant adolescents in dealing with the

shared realities of being ethnic minorities (e.g., Vietze et al., 2019), whereas cross-ethnic friendships support learning about the host culture (Graham et al., 2014) and foster social cohesion by reducing intergroup prejudice (Pettigrew, 1998). Furthermore, the school context plays a major role in providing social support to immigrant youth. Teachers are more likely to come from mainstream backgrounds (Thijs & Verkuyten, 2012), and school climate is likely to reflect the culture, policies and attitudes of the wider society (Schachner et al., 2018). Hence, feeling connected and accepted in a school environment can bring support to immigrant adolescents through a sense of belonging, positive emotions, and positive appraisals of the host culture (Schachner et al., 2018). In sum, general developmental factors related to family, peer, and school involvement seem to be associated with social support trajectory classes for immigrant and non-immigrant youth.

For immigrant youth, research needs to consider additional acculturation-specific processes related to experiences and challenges that may affect their perceptions of social support. Research on the role of social support in the acculturation process has therefore considered its relation to migration-specific experiences such as discrimination and acculturation orientations. Perceiving discrimination may change perceptions of social support, even when the number of persons in a social support system or social network remains unchanged (e.g. Oppedal, 2011). Host and heritage acculturation orientations have also been identified as important predictors of perceived social support in migrants, because the greater cultural interactions and competences that come with these orientations increase a sense of belonging to these cultures and perceptions of social support from representatives of these cultures (e.g., Oppedal et al., 2004). However, the direction of relationships between these variables is still unclear due to the predominance of cross-sectional, variable-centered designs in current research on social support and immigrant adolescents.

Social Support Trajectories and Psychological Adaptation

A lack of person-oriented research on social support trajectories also leaves unanswered how different social support trajectories relate to adaptive outcomes in adolescence, though Holden et al. (2015) found matching patterns between social support and mental health indicators in their adult sample. The consistent link between perceived social support and adaptive outcomes delineated in variable-centered research (e.g., Thoits, 2011, see above) also points towards the conclusion that trajectories of social support may be reflected in similar patterns of psychological adaptation. Ciarrochi et al. (2017) were able to

show that most combinations of support sources represented in the different profiles they uncovered were related to some well-being and health benefits, except the "isolated" profile that was low on all social support sources.

This indicates that children and adolescents are likely to draw comfort and security from the perception that social support would be available during times of stress (Chu et al., 2010). Furthermore, perceptions of support may also increase a sense of mattering to others, self-esteem and mastery (Thoits, 2011), preparing adolescents for future challenges they may face. Thus, social support can also be expected to increase self-efficacy, a well-known indicator of psychosocial adaptation and correlate of well-being (Luszczynska et al., 2005). A mechanism explaining this link between social-support and self-efficacy can be found in Bandura's self-efficacy theory (1997). According to this theory, children and adolescents gain a sense of self-efficacy not only by solving difficult problems, but also by receiving feedback and support from important others while facing challenges. Parents and peers, as important sources of social support in childhood and adolescence, serve as role models, provide encouragement and coping strategies. Hence, children learn to respond to stressful situations with adaptive self-regulatory strategies and consequently develop a higher level of self-efficacy (Bandura, 1997). This simultaneous growth in perceived social support and self-efficacy stands as a universal developmental process in adolescence. For this reason, and because developmental predictors have been found to be strong predictors of self-efficacy in minority youth (Titzmann & Jugert, 2017), we would assume that the connection between social support development and self-efficacy development in adolescence should be present both in immigrant and non-immigrant populations regardless of (national) context.

The Current Study: Aims and Hypotheses

As stated above, our main goal was to examine the number of social support trajectory classes, as well as the predictors and psychosocial consequences of class membership. Due to a lack of research, it is somewhat speculative to hypothesize the number of social support trajectories. Based on previous research and considerations about changes in the social world of adolescents we expected to find between two and four trajectory classes (Holden et al., 2015; Wrzus et al., 2013). At least two classes should be found: a stable high class and an increasing class. There may, however, be two additional classes (a stable low and a decreasing class). We hypothesized that we would find the same number of social support trajectory classes across all ethnic groups (H1), because adolescence generally is a time of

ecological transitions with substantial dis/continuity in social relationships, of which migration is only one example. An increasing social support trajectory class was expected to be somewhat larger in our immigrant groups than in our non-immigrant group.

To predict perceived social support trajectories we applied an acculturation development framework, studying general developmental and acculturation-related predictors in combination (Bornstein, 2017; Juang & Syed, 2019; Titzmann & Lee, 2018). With regard to predictors of trajectory class membership we expected commonality (characteristics/predictors that are common to any two or more groups) across groups in general developmental predictors derived from structural network support theories (i.e., commonality in the predictive effects of involvement in family, school and peer networks; H2a – tested in all three groups) and specificity (characteristics/predictors that are unique for some groups) in immigration-related predictors (i.e., specificity in the predictive effects of perceived discrimination, heritage and host cultural orientations; H2b – tested only in the two immigrant groups).

We also considered how trajectory class membership would relate to the psychological adaptation of adolescents. More specifically, we assessed self-efficacy as a well-known indicator of psychosocial adaptation and correlate of well-being (Luszczynska et al., 2005). The widespread support for the effectiveness of perceiving social support for psychosocial adjustment (Chu et al., 2010) led us to expect similar associations between trajectory classes and intercepts and slopes of self-efficacy across ethnic groups (H3). More specifically, we expected that trajectory classes are associated with self-efficacy development: Classes with higher or lower initial values in social support should report higher or lower starting values in self-efficacy, respectively. Furthermore, observed change rates in social support classes should be reflected in similar self-efficacy change rates.

Method

Participants and Procedure

The data presented here are part of a larger longitudinal study on the situation of adolescent immigrants from several countries to Germany and Israel considering the interplay between acculturative and developmental processes (see also Titzmann & Silbereisen, 2012). Sampling took place in cities with a population between 100,000 and 200,000 with differing proportions of immigrant inhabitants. Adolescent participants were selected according to

length of residence, school type, and age. Informed consent was obtained from all adolescent participants in this study and their parents. They were informed about the process and purpose of the research and their right to refuse participation without consequences at any time before, during and after data collection.

The sample comprised 1,326 ethnic German diaspora migrants, 830 non-immigrant German, and 1,593 Russian Jewish adolescents (N = 3,749; M_{age} = 15.45; SD = 2.01; 50% female) assessed longitudinally across three annual waves (2002 – 2005). Adolescents first took part in data collection at school (Time 1). Later, adolescents were contacted by post, after having consented to their data being used in that way (Time 2 to 3). We included data if the participant had taken part in at least one wave of data collection (33% took part in only one wave, 21% in two waves and 46% in all three waves). Full information maximum likelihood (FIML) estimation was applied to handle missing data, as is recommended for structural equation modeling (e.g., Schafer & Graham, 2002).

Measures

All measures were based on established scales, pilot tested, translated and back translated. Measurement equivalence across groups was confirmed using Tucker's phi (van de Vijver & Poortinga, 2002). For all measures, factors were equivalent across groups, φs ≥ .95. Unless otherwise indicated, we created composite measures by averaging across the corresponding scale items, with higher scores indicating higher levels on the relevant dimension. Questionnaires included additional items, which are not relevant for this report and therefore not discussed further.

Demographic information. Adolescent participants reported their age, gender, and ethnic group membership.

Social Support. The adolescents rated their level of agreement to five statements regarding their perceived social support at each time point (e.g. "When I'm sad there are people who cheer me up.", "There are some people I can always rely on.") on six point Likert-type scales (1 *do not agree* to 6 *do agree*; Schulz & Schwarzer, 2003; αs T1 – T3: .87, .90, .92).

Structural network support. To assess *family involvement,* the adolescents rated the personal applicability of three statements regarding their levels of family cohesion at Time 1 ("My family does a lot of things together.", "I can talk to my parents about almost everything.", "I get along well with my parents.") on six point Likert-type scales (1 *does not*

apply to 6 *applies*; based on Schneewind, 1988; α = .71). Using the same scale format, adolescents assessed the personal relevance of three statements regarding their level of *school involvement* as operationalized by their behavioral engagement with school at Time 1 ("I do well even in difficult subjects.", "I aim for a high grade point average.", "I do my homework carefully."; based on Schneewind, 1988; α = .69). We chose behavioral engagement, as this is the component of academic engagement that specifically reflects students' participation and efforts to perform academic tasks and it is also highly correlated with other measures of student involvement (Fredricks et al., 2004). To approximate the adolescents' *involvement with peers* we created a count variable from dichotomous (yes/no) items asking the adolescents whether they had a stable best friend, a relationship, and whether they were part of a clique. This resulted in the creation of one variable with a range of zero (indicating no peer involvement) to three (indicating high involvement with peers).

Migration-specific processes. Immigrant adolescents reported the extent of their *host culture and heritage culture adaptation* at Time 1 (e.g., "I enjoy social activities together with natives." (host culture) and "I enjoy social activities together with Aussiedler/immigrants from FSU." (heritage culture); Ryder et al., 2000; three statements each scored from 1 *does not apply* to 6 *applies;* α host culture = .84, α heritage culture = .78). Immigrant adolescents also reported the frequency of their experiences of discrimination in their daily lives (e.g. "in shops, "in the neighborhood") at Time 1 (Strobl & Kühnel, 2000; 4 statements scored from 1 *never happened* to 6 *more than 10 times;* α = .74).

Self-efficacy. Adolescents reported their *self-efficacy* (e.g., "It is easy for me to stick to my goals and accomplish them."; Schwarzer & Jerusalem, 1995; 4 statements scored from 1 *does not apply* to 6 *applies;* αs T1 – T3: .78, .80, .81).

Data Analysis

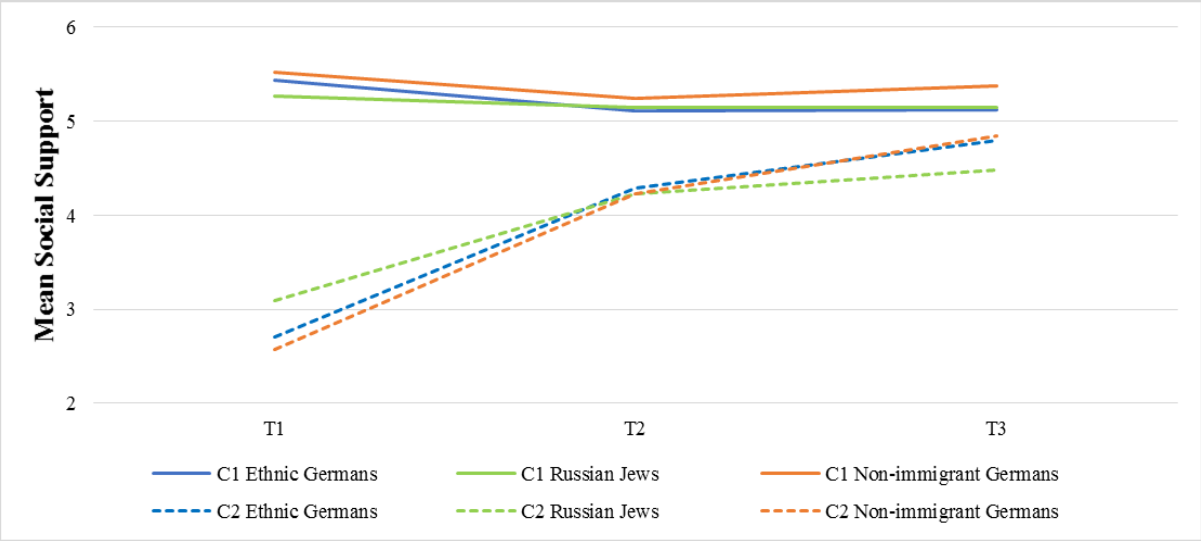
To address our first hypothesis, we applied the same strategy for the entire sample and for each ethnic group separately. First, we applied growth mixture modeling (Muthén & Shedden, 1999) in M*plus* Version 8 to identify classes of individuals who were similar in their reported social support trajectories across time using the longitudinal measures (T1-T3) of social support to build a growth curve model that delivered estimations of intercepts and slopes, describing adolescents' initial level and rate of change in perceived social support over time. We used unconditional growth curve modeling to freely estimate the shape of changes thereby allowing for nonlinear types of changes. To do so, we fixed factor loadings

of Time 1 manifest variables on latent slope variables to 0, and those of Time 2 manifest variables on latent slopes to 1. As a consequence, slope estimates referred to change between the first and the second wave. Factor loadings for Time 3 were freely estimated. We used the estimator MLR (maximum likelihood estimation with robust standard errors) as it is known to deliver robust estimations, standard errors, and fit statistics in small- and medium-size samples, even in case of deviations from the normality assumption (Muthén & Asparouhov, 2002).

In growth mixture models, classes differ by class-specific intercepts and slopes. Within classes, individuals may vary around this class-specific trajectory defined by intercept (i.e., starting point) and slope (i.e., change rate). The variance–covariance structure of intercepts and slopes as well as the residual variances of our measures were held equal across classes. To identify classes of perceived social support change, we started with an initial growth mixture model including only one class of individuals (thus representing the sample-average model). Using a stepwise procedure, we consecutively added one additional class, *k*, to the model. Then we compared whether the more parsimonious model described the data as well as the more complex model assuming one more class. To decide about the number of classes that are sufficient for describing the heterogeneity in our subsamples in an adequate and, at the same time, parsimonious way, we used several indices and took into consideration the theoretical meaning, as well as the sample size of each group, following suggestions made by Jung and Wickrama (2008). The Bayesian information criterion (BIC; Schwartz, 1978) and the Lo–Mendell–Rubin likelihood ratio test (LMR; Lo, Mendell, & Rubin, 2001) have been shown to yield reliable results in growth mixture modeling (Nylund, Asparouhov, & Muthén, 2007). To operationalize the classification quality of a given model, we used an entropy value. Taken together, a well-fitting and parsimonious model is indicated by a lower BIC value than the $k - 1$ class model, a significant LMR result, as well as by a high classification quality. In addition, new classes should cover at least 5% of the sample and provide theoretically meaningful and distinct new groups.

Figure 1

Social Support Trajectories by Ethnic Group



To address our second hypothesis, we investigated indicators of class inclusion from general and migration-specific characteristics of the adolescents by applying binary logistic regression in SPSS 25. In the third step of our analyses, addressing hypothesis 3, we considered the adaptive consequences of adolescent class membership by testing whether classes of adolescents differ with respect to self-efficacy as a marker of psychological adaptation. For this purpose, we first built an overall growth curve model combining all groups (Model 1), followed by two multi-group growth curve models in M*plus* referring to adolescents' (T1-T3) self-efficacy: one including all groups (Model 2) and one including only immigrant groups (Model 3). We introduced membership in the social support classes as an independent variable to these models. The growth curve models delivered estimates for self-efficacy intercepts and slopes (i.e., initial level and rate of change) for the group as a whole (Model 1) and each ethnic group (Model 2 & 3), as well as estimates for the regressive paths linking social support classes with the self-efficacy intercept and slope. Next, we compared freely estimated models to constrained models in which paths between classes and self-efficacy intercepts and slopes were constrained to be equal for all groups (Model 2) or for the immigrant adolescent groups (Model 3).

Results

Trajectory Classes of Perceived Social Support

Descriptive statistics of study variables and mean group differences are reported in Table 1. Table 2 provides information about the models we compared to identify classes of perceived social support change overall and for each group separately. In all ethnic groups, indicators point to a two-class solution in our data: it showed better fit than the one-class solution (as indicated by a lower BIC and the significant LMR value), whereas adding a third class did not comprise a substantial number of participants or further improve the theoretical interpretation of the model or the model fit (no improvement with regard to entropy, non-significant LMR value in three of four cases). The two-class models assigned between 83% and 87% of adolescents in each ethnic group (and 85% overall) to Class 1 and between 17% and 13% of adolescents in each ethnic group (15% overall) to Class 2. In each model means of levels and slopes for perceived social support were estimated (see Table 3), which can be used to describe the prototypical change trajectories within each Class (Figure 1).

Table 1

Means and Standard Deviations of Study Variables by Ethnic Group

	Overall			Ethnic Germans			Russian Jews			Non-immigrant Germans		
	n	***M***	***SD***	***n***	***M***	***SD***	***n***	***M***	***SD***	***n***	***M***	***SD***
Age	3639	15.45	2.01	1287	15.60	2.07	1535	15.66	1.76	817	14.82	2.21
Gender	3700	1.50	0.50	1310	1.53	0.50	1564	1.46	0.50	826	1.52	0.50
T1 Social Support	3551	4.99	1.13	1309	4.98_{a}	1.21	1418	4.92_{a}	1.00	824	5.12_{b}	1.19
T2 Social Support	2293	5.03	1.15	695	4.98_{a}	1.32	1105	5.02_{ab}	0.95	493	5.12_{b}	1.27
T3 Social Support	2115	5.13	1.11	663	5.08_{a}	1.24	941	5.06_{a}	0.98	511	5.32_{b}	1.07
Family Cohesion	3543	4.36	1.21	1300	4.38_{ab}	1.21	1419	4.28_{a}	1.22	824	4.46_{b}	1.18
Peer Involvement	3559	2.23	0.81	1314	2.15_{a}	0.83	1419	2.44_{b}	0.74	826	2.02_{c}	0.81
School Cohesion	3542	3.92	1.16	1301	3.98_{a}	1.14	1417	3.82_{b}	1.16	824	4.01_{a}	1.19
Heritage Culture Orientation	2698	5.14	1.17	1280	5.11_{a}	1.23	1418	5.17_{a}	1.12			
Host Culture Orientation	2695	3.73	1.56	1278	4.17_{a}	1.53	1417	3.35_{b}	1.49			
Perceived Discrimination	2674	1.65	0.85	1258	1.54_{a}	0.82	1416	1.74_{b}	0.87			
T1 Self-Efficacy	3510	4.15	1.12	1277	4.16_{a}	1.16	1419	4.23_{a}	1.07	814	4.01_{b}	1.12
T2 Self-Efficacy	2284	4.27	1.03	690	4.25_{a}	1.00	1102	4.33_{ab}	1.05	492	4.18_{ac}	1.01
T3 Self-Efficacy	2116	4.45	0.97	665	4.47_{a}	0.93	941	4.48_{a}	0.98	510	4.38_{a}	0.97

Note. Means with different subscripts differ at a minimum of $p < .05$.

Table 2

Comparison Fit Indices for the Chosen Model with 2 Classes and Alternative Models Overall and by Ethnic Group

Group	**Model**	**BIC**	**LMR**	**Entropy**	***n*1 (% sample)**	***n*2 (% sample)**	***n*3 (% sample)**
Overall	1 Class	24032	-	-	3749		
	2 Classes	22907	<.00001	.87	3194 (85%)	555 (15%)	-
	3 Classes	22351	.054	.81	3041 (81%)	504 (13%)	204 (5%)
Ethnic Germans	1 Class	8697	-	-	1326		
	2 Classes	8251	<.00001	.91	1134 (86%)	192 (14%)	-
	3 Classes	7920	.0006	.81	1046 (78%)	186 (14%)	94 (7%)
Russian Jews	1 Class	9405	-	-	1539		
	2 Classes	9095	<.00001	.82	1317 (83%)	276 (17%)	-
	3 Classes	9042	.21	.76	1262 (79%)	250 (15%)	81 (5%)
Non-immigrant Germans	1 Class	5747	-	-	830		
	2 Classes	5326	<.00001	.95	726 (87%)	104 (13%)	-
	3 Classes	5099	.08	.89	673 (81%)	85 (10%)	72 (9%)

Table 3

Model Estimates of Mean Level Intercepts and Slopes for Perceived Social Support in Each Class

		Well-Supported Class		**Increasingly-Supported Class**	
		M	95% *CI*	*M*	95% *CI*
Overall	Intercept	5.37***	[5.34; 5.73]	2.86***	[2.72; 3.00]
	Slope	-0.17***	[-0.22 ; -0.13]	1.47***	[1.26; 1.69]
Ethnic Germans	Intercept	5.39***	[5.21 ; 5.45]	2.62***	[2.38; 2.85]
	Slope	-0.27***	[-0.35; -0.19]	1.84***	[1.48; 2.20]
Russian Jews	Intercept	5.29***	[5.24; 5.35]	3.26***	[3.11; 3.41]
	Slope	-0.09*	[-0.17; -0.02]	0.98***	[0.70; 1.26]
Non-immigrant Germans	Intercept	5.50***	[5.44; 5.56]	2.53***	[2.28; 2.79]
	Slope	-0.14***	[-0.24; -0.04]	1.72***	[1.20; 2.24]

*$p < .05$. ***$p < .001$.

Across ethnic groups, adolescents in Class 1 showed a high initial rate of social support with a small significant decline over time, thus we named this class the "well-supported" class. In comparison, adolescents in Class 2 showed an initially low and significantly increasing perception of social support (named the "increasingly-supported" class). Post-hoc comparison of the confidence intervals (CIs) showed significantly higher mean levels of perceived social support in the well-supported than in the increasingly-supported class and significantly higher levels of perceived social support change in the increasingly-supported than in the well-supported class. A chi-square test of independence showed no relation between ethnic group membership and trajectory class membership in the overall sample, χ^2 (2, N = 3749) = 3.72, p = .156.

Predictors of Perceived Social Support Trajectory Class Inclusion

To investigate the influence of developmental predictors on trajectory class membership (with the increasingly-supported class as the reference group) we regressed our classes of perceived social support change onto age, gender, family, peer, and school involvement separately in each group. In a second analysis, we additionally considered the migration-specific processes of host and heritage orientation and perceived discrimination in our migrant adolescent groups only. The overall models were significant χ^2s (5) ≥ 133.82, *ps* < .001, Cox & Snell R^2s ≥ .11, Nagelkerke's R^2s ≥ .19, for the models with general predictors, and for the models including migration-specific predictors in a third step, χ^2s (8) ≥ 239.86, *ps* < .001, Cox & Snell R^2s ≥ .17, Nagelkerke's R^2s ≥ .29. The results (Table 4) showed that female gender, and higher family and peer involvement predicted membership in the well-supported class in all groups. Higher school involvement predicted membership in the well-supported class only among non-immigrant German and Russian Jewish groups. Further, membership in the well-supported class was predicted by higher heritage and higher host cultural orientation in both immigrant groups and lower perceived discrimination only among Russian Jewish adolescents in Israel.

Relationships between Trajectory Class Membership and Self-Efficacy Development

Latent-covariate-growth-curve-modelling indicated that adolescents in the well-supported class had higher self-efficacy and a less marked increase in self-efficacy over time than adolescents in the increasingly-supported class ($\beta_{\text{class on self-efficacy intercept}} = .34$, $p < .001$; $\beta_{\text{class on self-efficacy slope}} = -.35$, $p = .005$). The model showed excellent fit to the data, χ^2 (2) = 4.04, $p = .13$, RMSEA = .02, 90% CI: [.00, .04], CFI = .998. We used multi-group latent-covariate-growth-curve-modelling to examine the similarities or differences of ethnic groups regarding the associations between trajectory classes and self-efficacy. To this end we compared a model where all associations were freely estimated to a model in which paths between classes and self-efficacy intercepts and slopes were constrained to be equal for all ethnic groups (Model 2). We followed the same procedure to compare only the immigrant adolescent groups with each other (Model 3). In each ethnic group we found that adolescents in our well-supported class had higher self-efficacy and a trend towards a less marked increase over time than adolescents in the increasingly-supported class (see Figure 2; βs$_{\text{class on self-efficacy intercept}} \geq .326$, ps $< .001$; βs$_{\text{class on self-efficacy slope}} \geq -.278$, ps $\leq .094$ for the constrained model). Multi-group comparison analysis showed that while these effects had a similar direction in all groups they differed significantly between non-immigrant Germans and the two immigrant groups, fit indices for the constrained model: χ^2 (10) = 21.34, $p = .019$, RMSEA = .03, 90% CI: [.01, .05], CFI = .987, for the comparison $\Delta\chi^2$ (4) = 14.69, $p = .005$. Further model comparisons, which compared the freely estimated model and constrained model to a model where the intercepts were freely estimated, but the slopes were fixed, showed no difference between the freely estimated model and the model in which only slopes were constrained, $\Delta\chi^2$ (2) = 4.06, $p = .13$, but a significant difference between the model in which both intercept and slope were constrained and the model in which only slopes were constrained, $\Delta\chi^2$ (2) = 10.64, $p = .005$. This indicates that the difference between immigrant groups and non-immigrant Germans was due to the differences in the intercepts of self-efficacy not in the slopes of self-efficacy (see also Table 1). There were no differences between our immigrant groups, fit indices for the constrained model: χ^2 (6) = 10.36, $p = .11$, RMSEA = .02, 90% CI: [.00, .05], CFI = .994, for the comparison $\Delta\chi^2$ (2) = 4.08, $p = .13$.

Figure 2

Self-Efficacy Trajectories by Social Support Trajectory Class and Ethnic Group

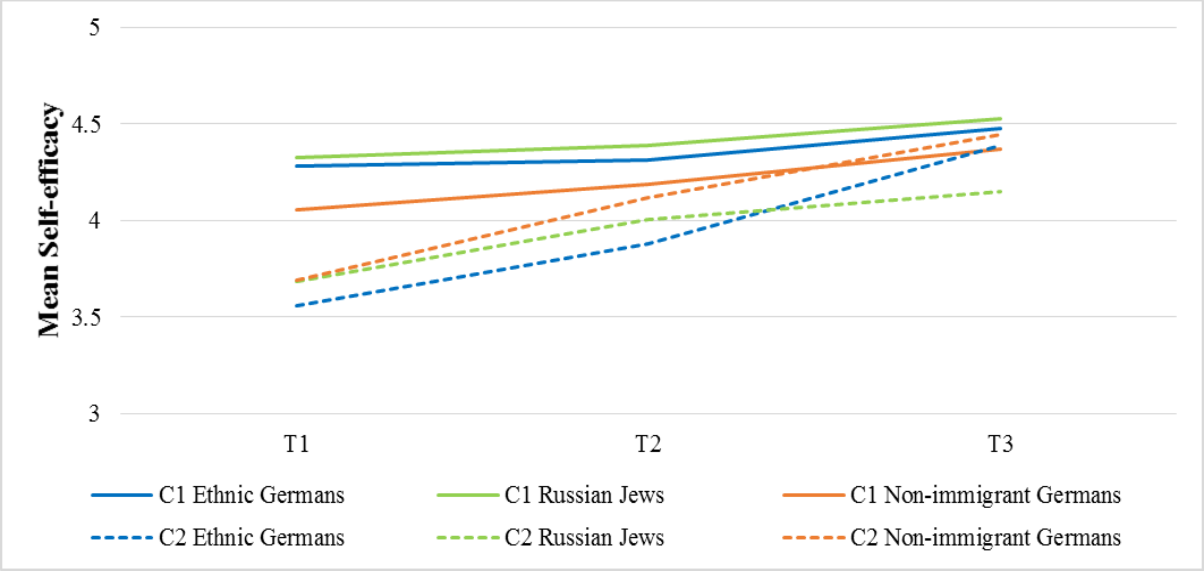


Table 4

Binary Logistic Regression Models Predicting Trajectory Class Membership from General and Migration-Specific Variables

	Ethnic Germans			Russian Jews			Non-immigrant Germans								
	b (SE)	Wald	*OR*	*b (SE)*	Wald	*OR*	*b (SE)*	Wald	*OR*	*b (SE)*	Wald	*OR*	*b (SE)*	Wald	*OR*
Age	-.17 (.04)	15.41***	.84	-.11 (.05)	5.83***	.89	-.08 (.05)	2.76	.93	.01 (.05)	0.08	1.01	-.21 (.06)	14.59***	.81
Gender	-.79 (.18)	19.95***	.45	-.68 (.19)	13.13***	.50	-.69 (.17)	17.50***	.50	-.44 (.18)	6.14*	.64	-1.16 (.24)	22.99***	.31
Peer Involvement	-.44 (.10)	19.23***	.64	-.43 (.11)	16.46***	.65	-.44 (.10)	19.93***	.65	-.44 (.11)	17.41***	.64	-.53 (.14)	14.51***	.59
Family Involvement	-.65 (.08)	69.97***	.52	-.53 (.08)	38.88***	.59	-.58 (.07)	78.30***	.55	-.45 (.07)	41.70***	.63	-.73 (.10)	53.38***	.48
School Involvement	-.06 (.08)	0.52	.94	.01 (.09)	.003	1.00	-.26 (.07)	13.30***	.77	-.26 (.08)	11.91**	.77	-.32 (.11)	8.77***	.72
Perceived Discrimination				.11 (10)	1.06	1.11				.25 (.09)	7.88**	1.29			
Heritage Culture Orientation				-.49 (.07)	51.06***	.62				-.59 (.07)	74.68***	.55			
Host Culture Orientation				-.29 (.06)	22.50***	.75				-.22 (.06)	11.98**	.80			
Chi-Squared (df)			116.87 (3)***			88.10 (3)***			145.94 (3)***			99.68 (3)***			104.91 (3)***
Nagelkerkes R^2			.20			.31			.19			.29			.28

Note. Analyses used the increasingly-supported class as reference group. *$p < .05$. **$p < .01$. ***$p < .001$.

Discussion

This study underscored the utility of person-oriented comparative research in advancing developmental migration research. Supporting our first hypothesis and in line with previous research by Holden et al. (2015), we showed that, regardless of immigration status, social support trajectories can be summarized into meaningful classes with distinct predictors and psychological consequences. We were able to differentiate adolescents whose perceptions of social support remained fairly high across adolescence (the "well-supported" class) from those whose perceptions started at a lower level, but increased (the "increasingly-supported" class). These classes were very similar across ethnic groups and also provided the best solution to the data in the sample as a whole. The well-supported class, which was our largest class in the sample as a whole, and in each ethnic group separately, described adolescents who were more likely to be female, to feel highly involved with family, peers and, for non-immigrant Germans and Russian Jews only, school. Immigrant adolescents in this class reported high heritage culture and host culture orientations; Russian Jews in this class perceived less discrimination. In addition, adolescents in this class had higher initial levels of self-esteem, which increased slightly over time. Concurrently, adolescents in our increasingly-supported class were more likely to be male, with lower involvement with family, peers, and, for non-immigrant Germans and Russian Jews only, school. Immigrant adolescents in this class reported lower heritage culture and host culture orientations; Russian Jews in this class perceived more discrimination. However, adolescents in this class steadily increased in their perceptions in social support and this pattern was matched in terms of their self-efficacy, which started lower but showed a marked increase over time.

Taken together these findings are very encouraging. For one thing, the vast majority of adolescents in our sample (approximately 85%) felt well-supported across adolescence, benefitted both from positive general developmental and migration-specific processes, and had positive adaptation outcomes over time. In addition, even those adolescents - in our increasingly-supported class - who experienced "starting difficulties" in terms of their perceived social support were able to improve in terms of social support perception and self-efficacy over time, despite the presence of general developmental and migration-specific stressors. Thus, and in line with theorizing on positive youth psychology (e.g., Lerner et al., 2005), they seemed able to draw from their bio-psycho-social system to perceive increasing

social support with concurrent increasing adjustment outcomes. The fact that adolescents benefitted from involvement with family and peers (and, in two of three groups, with school), supports this contention and our second hypothesis regarding commonality in sources of support from structural networks. The results also show that the different sources of support explain unique shares of variance in perceived social support. Hence, the different sources exert additive rather than interchangeable effects on perceived social support. These results complement past findings (e.g., Crockett et al., 2007) that indicate that family is the most important source of social support with consistently larger effects of family than peers across groups. It also may explain why we found no evidence of trajectory groups that were low in perceived social support across time, or decreased across time unlike Holden et al. (2015). Contrary to adulthood, adolescence is marked by growth across several spheres of social life, thus, providing support from multiple sources.

In accordance with the second part of our second hypothesis (H2b), migration-specific processes were found in the effects of host and heritage orientation on perceived social support trajectory class membership across both immigrant groups. Importantly, we were also able to provide evidence for the distinct effect of both cultural orientations independent of the national context in which acculturation took place and after accounting for structural network sources of social support in our regression models. Hence, adolescents high in both orientations were more likely in the well-supported trajectory class, which may explain the common finding that bicultural individuals are better psychologically adjusted (e.g., Nguyen & Benet-Martinez, 2013).

In line with our third hypothesis, relationships between our classes and self-efficacy were remarkably similar across all groups and statistically identical for our immigrant adolescents. That is: the patterns of perceived social support trajectories and self-efficacy aligned, as expected and in line with the findings of Holden et al. (2015). Thus, focusing on ways to improve the perceptions of social support has the potential to increase the psychological adaptation of migrant and non-immigrant adolescents. Together, our findings align with past research (e.g., Chu et al., 2010), but – importantly - extend our knowledge to provide person-oriented and longitudinal evidence across immigrant and non-immigrant samples.

To summarize, our study contributes to the debate on the coaction of general developmental and migration-specific processes as well as the generalizability across samples. We found evidence for common developmental processes in perceived social support in ethnic group similarities in trajectory classes, their consequences (regarding self-

efficacy as an adaptation outcome) and their developmental antecedents (e.g., family and peer involvement). We also found acculturation-specific processes in the effects of host and heritage cultural orientations. Some of these effects were generalizable across all groups (i.e., general developmental processes predicting perceived social support trajectory class membership), some were migration-specific (e.g., cultural orientations predicting social support) and some effects were group or context specific (e.g., effects of perceived discrimination and school involvement on trajectory class membership).

Though we did not have a priori expectations regarding context (or group) specific findings, unpacking these findings should be of interest for future research. We found that higher school involvement predicted membership in the "well-supported" class among non-immigrant German and Russian Jewish groups, but not among ethnic German immigrants in Germany. We also found that higher perceived discrimination was predictive of membership in the "increasingly-supported" class for Russian Jewish adolescents in Israel, but not for ethnic German adolescents in Germany. Such unexpected differences should always be interpreted with caution, as they are data driven and may simply reflect sample characteristics. Given this uncertainty, these results should be replicated in planned comparisons before they can be interpreted further.

There are some potential factors that could give direction to such planned comparative hypotheses of difference. For instance, although the immigrant groups we considered in this research were well matched in many respects, there were some national differences in the regional placement of ethnic German diaspora in Germany and Russian Jews in Israel. The latter were more likely to live in segregated areas, which may have included more segregated schools in which they were a numerical majority. In contrast, ethnic German immigrant adolescents in Germany were spread throughout various communities and experienced a context in which they were a numerical and ethnic minority. Research on ethnic minority students shows that school belonging increases when the ethnic composition at the school level (Benner & Graham, 2007) and at the classroom level (Mok et al., 2016) has larger proportions of ethnic in-group members. This could explain the differences we found and would suggest that explicitly considering ethnic school or classroom composition alongside ethnic minority status might help to further delineate expected inter-group differences in planned comparison hypotheses of context in adolescents.

Limitations, Implications, and Future Directions

Despite our promising findings, there were, of course, several limitations to our research, not least due to the fact that we relied on single-informant self-report data to operationalize our study variables. Thus, while we were able to make statements about the course, the predictors and outcomes of social support trajectories, we have little additional information regarding the nature of networks that succeed to provide these perceptions. Thus, we cannot say why adolescents are more or less involved in these networks, or whether there are aspects of reciprocity that might explain differential trajectories. Future research that incorporates multi-informant perspectives is therefore desirable, ideally this would be based on research that speaks to the processes that foster involvement in different areas of adolescent lives. In a related point, it is important to note that we only considered Time 1 predictors of our social support trajectories due to study constraints. This means that we cannot say how changes in network involvement or migration-specific processes affected changes in social support perceptions. More research is needed to better understand the dynamics at play here. Such research could also include a wider definition of the networks adolescents are embedded in to include extended family ties (within and across borders), siblings, leisure contacts or neighborhoods to name just a few that were beyond the scope of our study. Another limitation is that our data were gathered some time ago, raising the question of whether our findings would still hold today. Although we would suggest future replications to answer this question, we believe the processes we describe would remain the same, because they reflect general developmental processes that should hold even in globalized, digitalized, superdiverse societies (Meissner, 2019). To some extent, our study even provides evidence for this expected generalizability, because results were rather similar across the three groups, despite differences in their migration history and context of settlement. In a final point, it would be desirable to track adolescents further into young adulthood in future research to substantiate our claims about the nature of the trajectories we found. If our claims are correct at least some young adults should experience a decline in perceived social support once they leave home, start work or found a family.

Nonetheless, this study is – to our knowledge - the first longitudinal and person-oriented investigation of the way in which aspects of the acculturation process may affect individual perceptions of social support over time and what the consequences of different social support trajectories for migrant adolescents might be. Thus, it provides an important addition to our understanding of the impact of migration on adolescent development and the

literature on the role of perceived social support for immigrant adolescents and adolescents more generally. Taken together, our results indicated that immigrant and non-immigrant youth are more similar than one might expect, but that the coaction of development and acculturation is nuanced and sometimes dependent on specific contextual factors. Stakeholders looking to support immigrant adolescents' psychological adaptation should be aware of this nuanced coaction and its implications. For researchers, our findings highlight the importance of considering both old and new findings in developmental acculturation research through the lens of dynamic individual change. It is increasingly apparent that cultural adaptation and change are an integral and inseparable part of immigrant adolescents' individual development, but that the ways in which this change affects individuals is not yet well researched or understood in traditional variable-centered approaches. We need to find ways, based on theories that conceptualize the dynamics of change, to implement and use the array of methodological advances now available to us if we truly want to understand the impact of migration on individual development (cf. Titzmann & Lee, 2018). For practitioners, our results should be interesting, because they caution us to remember that immigrant adolescents are first and foremost adolescents who benefit from functioning social support networks in the same way that *all* adolescents do. Thus, adverse outcomes can be addressed by working with families, peers, and schools to improve adolescents' perceptions of social support. Additionally, the importance of fostering both heritage and host culture orientations needs to be emphasized: schools and educators, social workers and other professionals can help families and adolescents to learn about culture, foster cultural competence and convey acceptance of the unique cultural experiences individuals bring to any given situation. As yet, such a diversity mind-set often takes the back seat to ensuring competences in the host culture, and while this remains important, our results would suggest that the heritage culture is equally important in creating perceptions of social support and, consequently, psychological adaptation.

Conclusions

Our comparative longitudinal study makes a unique empirical contribution to the research on immigrant youth adaptation by integrating developmental and acculturation science in research on perceived social support trajectories during the adolescent years. Results show that immigrant and non-immigrant adolescents can be assigned to a similar number of social support trajectory classes with similar changes over time. In addition, both the well-supported

and the increasingly-supported class were associated with common developmental (highly involvement with family and peers) as well as acculturation-specific processes (host and heritage culture orientations) and were linked to self-efficacy trajectories. While further multi-group comparisons will be necessary to corroborate our findings, our study provides evidence that the integration of development and acculturation is fruitful for a more holistic understanding of immigrant and non-immigrant youth. Furthermore, studying trajectory classes (such as our social support trajectory classes) may be an important step for future research: Empirically derived classes can overcome implied ethnic divisions, because these classes are more permeable and may avoid the development of stereotypes based on comparisons of essentialized ethnic group membership.

6. Discussion

The overall purpose of this dissertation was to show how ethnic comparative research can be conducted from a more reflective and resource-oriented perspective. To achieve this goal, I used innovative methods for conducting ethnic comparative research starting from social categories (e.g., immigrant vs. non-immigrant, ethnic minority vs. majority) and extending their meaning with the use of psychological process variables. I conducted three studies drawing on multi-informant, person-oriented and longitudinal data. In addition, I focused on positive developmental outcomes to promote a strength-oriented perspective and to deliver recommendations for prevention and intervention. Especially during adolescence, which is a phase of identity building, formation of personal values and exploration of new relationships (e.g., romantic, peer group, other important adults), it is of utmost importance to focus on adolescents' potential and competencies in order to best support these developmental processes (Coll et al., 1996).

The research studies included in this dissertation highlight different mechanisms that may explain similarities and disparities between groups. First of all, although ethnic minority and majority groups seem to undergo similar trajectories of adjustment (viz., life satisfaction, academic self-efficacy, social support), one group is being exposed to a higher risk than the other group. For example, the ethnic minority adolescents investigated in Study 1 showed poorer learning conditions than the ethnic majority group, which influenced their adaptation to home-learning over time. Second, in Study 2 I investigated several predictors that should theoretically influence adjustment in both ethnic minority and majority groups (e.g., teachers' enjoyment while teaching). However, empirically, this study proved that there are group-specific factors (e.g., SES, perceived ethnic discrimination) that influence the teacher-student relationship quality. In other words, belonging to one of the groups had a moderator effect on the assumed associations between predictors and outcomes, which is in line with previous research (Murray et al., 2008; Thijs et al., 2012). The third study, which was based on a person-oriented approach complemented and extended the second study by showing that particular factors can influence development only in specific ethnic groups (e.g., acculturation orientations).

The first research aim was to examine positive developmental outcomes among minority and majority groups by focusing on psychosocial (viz., life satisfaction, self-efficacy and social support) and school adaptation (viz., teacher–student relationship and academic self-efficacy) variables. The findings showed that the levels of life satisfaction and academic

self-efficacy may improve if adolescents grow up in favourable home learning environments that are characterised by proper learning conditions and parental involvement. Next, the teacher–student relationship showed associations with a positive interethnic school climate and awareness of social heterogeneity in the classroom, while social support trajectories matched trajectories of self-efficacy over time.

To achieve my second research aim, which was to investigate similarities and differences between ethnic minority and majority groups and offer contextual explanations (e.g., home learning environment, school) for the differences found, I examined in a first step the mean differences between groups and in a second step, possible explanations for these group differences. This aim was addressed in Studies 1 and 2. First, I found differences between ethnic minority and majority groups in psychosocial adaptation (e.g., life satisfaction and academic self-efficacy) and in the teacher–student relationship. In Study 1, ethnic minority adolescents reported a decrease in life satisfaction and stable academic self-efficacy, whereas ethnic majority adolescents reported stable life satisfaction and an increase in academic self-efficacy. In Study 2, both teachers and students reported more conflict in ethnic minority compared to ethnic majority student-teacher dyads, and teachers reported more requests for instrumental help from majority than from minority students. Second, these studies revealed some explanations for the existing disparities. In Study 1, I showed that in particular the home learning environment (i.e., learning conditions and parental involvement) plays a crucial role in the adaptation of ethnic minority and majority youth. Learning conditions at home were able to 'explain away' the different trajectories of life satisfaction and academic self-efficacy, meaning that if all adolescents would have equal learning conditions at home, then they would all report better adaptation. Therefore, this study shows that disparities are not a matter of ethnic group status, but more a matter of availability of resources. Additional results from this study showed that favourable home learning environments were predicted by a strong family climate and good student-teacher communication. In Study 2, to better understand the mean differences between students and teachers with regard to relationship quality, I investigated various predictors at the student-level and classroom-level. The findings highlighted similarities and differences in perceptions between ethnic minority and majority student-teacher-dyads and between students and teachers in general. Common determinants for ethnic minority and majority student-teacher-dyads were a positive interethnic school climate and teachers' awareness of social heterogeneity. However, in minority dyads, teachers reported more requests for instrumental help from students with a higher SES, whereas in ethnic majority dyads higher levels of SES

led to lower levels of conflict in teachers' reports. Furthermore, perceiving ethnic discrimination from teachers led to lower levels of relationship quality in minority student-teacher-dyads. Taken together, the results from Study 1 and 2 underline the importance of the mesosystemic influences (i.e., home-to-school and school-to-home connections) for children and adolescents' academic and social-emotional functioning (Bronfenbrenner, 1977; Smith et al., 2020). The comparison of ethnic minority and majority adolescents emphasises common and specific factors that contribute to the general and school adaptation and shows possible avenues for future interventions in schools.

The third research aim was addressed in Study 3 and focused on analysing the variation between adolescents based on subgroups reflecting behaviour instead of ethnic categories. In this study, I investigated perceived social support trajectories in two immigrant groups and one non-immigrant group, on the basis of how involved adolescents were with their family, school and peer group. The results showed that although the effects had a similar direction in all groups, they differed significantly between ethnic majority and minority groups. Two social support trajectory classes were found across all ethnic groups: a well-supported class (i.e., high involvement with family and peers, higher heritage and host culture orientations among minority adolescents) and an increasingly-supported class (i.e., lower involvement with family and peers, lower heritage and host culture orientations). School involvement was also important for the social support trajectories, but only for non-immigrant Germans and Russian Jews. In addition, Russian Jews in the increasingly-supported class perceived more discrimination, which may be an indication for a context-specific finding. In sum, this study represents one example for the claim that all adolescents undergo the normative developmental processes in a similar way, but in different likelihood and for different reasons. Investigating both ethnic minority and majority adolescents offers the possibility to capture the general and group-specific variation.

Taken together, my studies represent three possibilities of how to conduct comparative research with ethnic minority and majority groups in a more reflective, contextually aware manner. These studies show primarily that comparative designs have the potential to widen the existing knowledge on between-group and within-group processes alike, they are very versatile regarding the methodologies applied and, they have the potential to act against unfounded claims about intergroup relations as they empirically evidence similarities otherwise unknown. In my view, the most compelling insight from the present work is that comparative studies should follow a systematic sequence of research steps that build on each other and that offer additional information on the relations between groups.

Research with ethnic minority and majority groups is a multi-layered topic because it includes both developmental and acculturation-related aspects that can only be assessed and measured in different steps and with different statistical methods. Hence, a single approach may be sufficient to answer the research questions (e.g., the person-oriented approach includes a view on the inter-individual and intra-individual processes) or, two or three approaches may be necessary to fulfil the aims of the study (e.g., mixed-method studies, where interviews are necessary to complement the quantitative findings). Undoubtedly, every study leaves somehow some unanswered questions, but the goal should be to tap on the full potential of the available data and to choose the most relevant method for the variables in the study. For example, if one decides to study variables that are tightly connected to a stereotyped thinking about ethnic minority groups (e.g., beliefs about achievement and education, which may be either considered as innate, modifiable or context-dependant; Civitillo & Jugert, 2022), a person-oriented approach with ethnic minority and majority groups could be useful. The inclusion of an ethnic majority group would neutralize the role of ethnicity on beliefs because it would show that all families or adolescents share similar beliefs regarding education and, other factors, irrespective of ethnicity, contribute to the formation of beliefs (e.g., social class, fixed social structures, previous experiences with the school system, unavailable support network, etc.). Another important idea to note is that research with ethnic minority adolescents may be solid in some theoretical constructs (e.g., acculturation orientations), but at the same time, numerous concepts are still substantially unknown (e.g., the situational nature of ethnic identity, parental and school ethnic socialization). Therefore, before initiating comparative studies, qualitative methods such as field studies or group discussions could first examine ethnic socialization in schools and classrooms with different levels of heterogeneity. In summary, the present research contributes to a growing body of evidence suggesting that ethnic comparative studies are able to ingeniously explain variation in different outcomes and among different groups of ethnic minority and majority adolescents as long as various methods of analysis are used.

6.1 Strengths and Limitations

This dissertation addressed an ongoing challenge of studying ethnic minority and majority groups in a more inclusive and reflective manner. Ethnic comparative studies have long been falsely considered to equate a deficit-oriented perspective. Therefore, I aimed to

show how comparative approaches can be transformed to shift the focus from social categories to a broader understanding of perceptions and behaviours that considers the variability between and within groups and advances previous knowledge on positive developmental outcomes. My studies demonstrate that ethnic group membership has only a small explanatory value in psychosocial and school-related outcomes. Contextual factors, such as home learning resources or inclusive school climates explained more variance in the outcomes studied, which is in line with previous theoretical assumptions (Suárez-Orozco et al., 2018). Furthermore, my research shows that the same predictor can have differential effects on different groups (e.g., SES was an important predictor of relationship quality in the minority group but not in the majority group), which underlines again the importance of ethnic comparative research.

The main strength of my research was the application of often demanded methodological research strategies: including multi-informant, longitudinal and person-oriented measures. The use of multi-informant, dyadic data while investigating student–teacher interactions was important because previous research showed less to no agreement between students and teachers and only few studies looked at students' and teachers' perspectives among ethnic minority and majority groups (Verhulp et al., 2019). The longitudinal designs captured changes in developmental processes under normal conditions (e.g., trajectories of social support) and under important life events, such as the school closures during the COVID-19 pandemic. The person-oriented approach has the advantage of capturing context- and group-specific findings among different ethnic minority groups and national contexts and therefore, shows whether acculturation processes take the same course over different setting conditions (Benbow & Aumann, 2020).

Although the present studies complement and advance previous empirical evidence on ethnic comparative research in innovative ways, it is appropriate to recognize several potential limitations. One is related to the ethnic identities of minority adolescents, more specifically the interplay between how minority adolescents see themselves and how they are seen by the society. In my studies, I considered adolescents to belong to a minority group if they or their parents were born in another country and defined ethnicity in terms of status and power differences. However, the minority–majority dichotomy depicts fixed categories and it may not fully acknowledge the reality of ethnic groups. Furthermore, it may not match the meanings adolescents ascribe to their ethnic identities. Research on the construction and representation of ethnic minority identity has shown that there is a large variation in the dimensions of comparison. Ethnic minority members may define themselves in terms of

nationality, generation status, or the terminology used in the society (e.g., ‘foreigner’; Verkuyten, 1997). Second-generation ethnic minority adolescents in particular, who come into near contact with the ethnic majority group by birth may show higher levels of identification with the ethnic majority group than with the minority group to which the society usually assigns them (Nesterko & Glaesmer, 2019). In my work, I controlled for generation status and found no associations with teacher–student relationship quality. However, new avenues of research may be helpful to gain a better understanding of the concept of self-identification. For instance, the use of community-based participatory research may offer a more in-depth exploration of how adolescents perceive themselves as individuals and members of an ethnic group (Kia-Keating & Juang, 2022). One may consider the school as being the community and allow students to discuss self-identification topics and afterwards form hypotheses about the development and use of ethnic identity in everyday life. One great advantage of this approach is that it also brings more awareness on specific topics among adolescents, which may ease the implementation of future data collection stages.

A second limitation is that the minority–majority dynamic changes depending on the context of interest (e.g., school, family, peer group or neighbourhood). In other words, who belongs to which group, who is a minority or majority, fluctuates in constant relation to the context. For example, one individual may be a minority in school, but a majority in the neighbourhood. In my studies, I considered the societal level to be decisive for the minority–majority differences. However, with regard to the current demographic changes, there is a need to study the effects of these status dynamics in more detail. If, for example, in capital cities adolescents come into contact with two or more highly diverse contexts every day, identification with the ethnic minority group may be less salient for them. Therefore, it would be of interest to look at how the context influences group belonging and how adolescents make use of their ethnicities in day-to-day interactions.

A third limitation is that a higher number of minority groups were missing from my studies. Only in the last study, which was based on a person-oriented approach, I included two immigrant groups. In terms of future research, it would be useful to examine various ethnic groups with the aim of reaching a more flexible perspective on power differences. Such studies may help practitioners differentiate which groups need more support and how these can be best supported. Nevertheless, such comparisons must be thoughtfully designed in order to not encourage existing stereotypes.

A fourth limitation is that I focused mostly on environmental factors to explain disparities and group differences (e.g., learning conditions, school and classroom climate).

Future studies may focus also on internal resources and everyday experiences as explanatory variables. Some examples would be resiliency, self-esteem, host culture competencies or personal values and beliefs.

Finally, a fifth limitation is that my studies focused more on between-person variability and less on within-person variability (viz., Study 1 and Study 3 investigated trajectories in different outcomes). However, in particular during adolescence, daily experiences have a significant impact on youth's psychological and academic adjustment. For example, a review of 19 studies on daily experiences of ethnic-racial discrimination showed that high levels of such discrimination on a daily basis related to high levels of maladjustment and highlighted within-person associations with sleep duration and affective states in the family (Civitillo & Jugert, 2023). Combining within-person and between-person designs may offer a more integrated picture of developmental processes. Therefore, more studies using shorter-term approaches (e.g., daily diaries, experience sampling) are needed in order to complement research on higher-order explanatory variables, such as contextual aspects of development.

6.2 Implications for Inclusive Comparative Research

In this final section, I derive, on the basis of my studies and previous literature, some recommendations for more inclusive comparative research. Reducing disparities and acknowledging similarities and differences between ethnic groups starts when one is designing the research questions and aims. Causadias and colleagues (2021) issued a call for structural reforms on research with ethnic minority groups whereby they suggested acknowledging the role of four dimensions involved in the process: people, places, practices and power. *People* represent all individuals who are involved in the research process (e.g., researchers, research participants, students), and *places* refers to the academic institutions, grant agencies, and journals where research is conducted and disseminated. *Practices* include activities, methods, research designs and interpretations that are, to some extent, objective. However, at the same time, researchers make decisions about data collection and which analyses should be conducted. *Power* refers to the existing social stratification in the society; the enforcement of hierarchies when interpreting results; and the power regarding resources, which are unequally distributed among different groups. On close analysis, the idea of this research system is to critically reflect on all parts involved in the research and publication process when studying and comparing ethnic groups because this directly influences

recommendations and policies. A similar direction of research that advocates for a critical view of how power structures influence the research process is the intersectional approach. With regard to quantitative research, this approach suggests the inclusion of system level variables (e.g., neighbourhood SES) to explain individual-level outcomes and underscores the importance of describing the broader historical and political context when analysing and interpreting the results (Moffitt et al., 2020).

According to these theoretical models, a first suggestion for comparative research with ethnic minority and majority groups is to define the research question on the basis of a combination of theories with a developmental and acculturation-related focus and to take into account the more or less diverse contexts in which these processes take place (Crul, 2015). One starting point could be the integrative risk and resilience model for understanding the adaptation of immigrant-origin children and youth (Suárez-Orozco et al., 2018) discussed in the beginning, which can be examined in combination with other theoretical frameworks (Juang & Syed, 2019). For example, the *polyculturalism approach* sustains that the cultural influence is dynamic, intermittent, and situated and, that the determinants of culture are in continuous evolution and shaped by intercultural interactions (Morris et al., 2015). This approach may give consideration to ethnic minority adolescents, whose development is defined by more than one or two cultures, as well as to ethnic majority adolescents who adopt new cultures (e.g., remote acculturation). The comparison of groups could then be designed in a more flexible manner, by including different combinations of cultural groups: one group that identifies with both the minority and majority culture and one group that identifies with two cultures that differ from the culture of the dominant group. Furthermore, to better capture psychological developmental processes among youth, the decision of which ethnic groups are included in the research must be done in relation to the research question and the study aims. For example, if the aim of the study is to find out how bicultural competence develops, one may investigate only one or more groups of minority adolescents with no need to include a majority group. However, if the interest is to capture developmental differences between groups on inter-ethnic friendships for example, then different acculturating and non-acculturating groups are necessary (Syed, 2020). Other important practices for comparative research related to methodological aspects are establishing measurement equivalence and choosing appropriate sample sizes (Arellano, 2022; Burlew et al., 2019).

Another aspect to consider is the terminology used for the groups studied and, to offer readers detailed information on the ethnic groups investigated. Next to demographic characteristics, such as gender or age, there should also be information about country of

origin; citizenship; generational status; languages spoken; and, if applicable, reasons for migration and length of residence. Describing all groups in these terms may contribute to promoting similarities and differences not only through the results obtained but also through the status quo. The American Psychological Association's *Publication Manual* offers thorough and up-to-date recommendations for bias-free language regarding racial and ethnic groups (2020). Depending on the research question, researchers are encouraged to be as specific as possible regarding group characteristics (e.g., to name the nation or region of origin of ethnic groups rather than a generalised origin); to be sensitive to how people describe themselves; and, when possible, to use their self-identification, without promoting stigmatising language. Some terms have negative connotations that may strengthen disparities instead of reducing them. For example, when comparing a dominant to a non-dominant ethnic group, instead of using 'minorities' or 'minority students', a modifier (e.g., 'racial', 'ethnic' or 'racial-ethnic') should be used. However, although these are general recommendations for all psychologists and researchers, choosing the most appropriate label is also related to the socio-political environment where the research takes place. In the European context, for example, several studies have evinced the idea that choosing the right terminology presents a challenge because of a reluctance to openly discuss issues of race and ethnicity (Jugert et al., 2022). Moreover, in some areas, ethnic minority group members have for a long time been ascribed labels related to 'foreigner' or 'guest worker', which has isolated them completely from the national group (Jugert et al., 2022; Moffitt & Juang, 2019). In this case, researchers are challenged in two ways: (1) to explain their participants what ethnicity, culture or race actually mean, and (2) to choose the appropriate terminology for their participants depending on the context and the age of the participants. There are, however, no clear recommendations regarding the best terminology because these concepts constantly fluctuate in relation to the current political decisions and, thus, need to be constantly adapted. For example, there is a debate at the moment about how to change the label 'migration background' in the official statistics in Germany in order to give consideration to all ethnic groups irrespective of generation status or citizenship (Will, 2022). A possibility would be to ask participants about how they identify themselves and provide an open answer format. However, especially during childhood and adolescence, one's self-identification may change more often than during adulthood. Another difficulty when asking participants openly about their ethnic identification is that adolescents may go beyond the 'borders' of the expected self-identification construct and decide for higher-order identifications (e.g., European identity; Jugert et al., 2019). There is therefore no perfect

formula to decide on a label, but there is a consensus that identity denial and otherness are some processes that should be avoided in research with adolescents (Jugert et al., 2022).

A further suggestion is that research findings should be interpreted from a reflective and knowledgeable mindset regarding cultural bias (Burlew et al., 2019; Vietze et al., 2022). As is the case with qualitative research, self-reflection (i.e., the interrogation of one's own position on the research topic) is essential when authors interpret the results of quantitative research (Buchanan et al., 2021; Suzuki et al., 2021). For instance, researchers must be aware that there may be some independent variables missing in the data set, which is why the interpretation of the results is somehow limited. Moreover, depending on the analysed construct, there is usually a high variation in the literature with regard to the measurement instruments and response formats used (e.g., rating scales, dichotomous items), that may hamper the generalizability of a study's results. Another aspect to take into account in studies of ethnic group differences is the ethnic match or mismatch between the assessment team and the participants. Research has shown that including interviewers with the same ethnicity as the participants uncovers additional within-group variability (Kappelhof, 2014).

The long-term goal of future research and practice should be to shift the focus from the ethnic minority–majority binary as the unit of analysis to social categories (e.g., self-identification, religion, generational status) that concern the whole population and aim for a more inclusive way of capturing participant heterogeneity. For instance, one study compared the explanatory value of different social categories, such as migrant background, family heritage, religion, citizenship, cultural identification and generational status and looked at how these social categories predicted discrimination, perceived societal Islamophobia, and national identity (Vietze et al., 2022). Family heritage and religion explained slightly more variance in perceived discrimination and societal Islamophobia than minority background and cultural identification explained more variance in national identity. In sum, these results showed that more inclusive social categories are able to capture differences between groups, but the added value compared with migration background was not considerable.

Future research could also build and validate new measures that better capture within-group variation among youth and avoid generalisations. For example, such a measure could incorporate musical interests, the language adolescents most frequently use, or constellations of shared values and beliefs. Newer studies investigated assimilation orientations based on the ethnic groups' music taste. Stewart and colleagues (2019) compared the music tastes of Mexicans in Mexico and Mexican immigrants (first-generation and second-generation) with those of African Americans and the majority group as an indicator of their assimilation

levels. Mexican immigrants showed high levels of assimilation to the majority group, whereas Mexicans living in Mexico had low levels of assimilation to the majority group, and were rather similar to African Americans. However, because this is a rather uncommon practice to measure cultural assimilation, it may be useful to validate the results with other indicators of assimilation (e.g., language competency, friendships with members of the dominant group) and across other groups and contexts. Though unusual, such creative measures may foster a more flexible and curious thinking among researchers and practitioners.

Whereas these suggestions apply to ethnic comparative studies in general, this dissertation has some potential intervention implications as well. With regard to adolescents, I ascribed them to an ethnic group based on their parents' country of origin. However, future research should aim towards finding new ways to build groups on the basis of how adolescents see themselves. Thus, it would be appropriate to explore in more detail the ethnic labels that adolescents use for themselves (i.e., self-categorisation) before choosing a social category to compare groups. However, ethnic labels depend on the ethnic-racial identity of adolescents and research on this topic is still limited. One important aspect that is necessary in comparative studies is a clear conceptualization of ethnic-racial identity. As the understanding of this construct depends on the context and is, to some extent, formed on the basis of a country's history and diversity policies, it is a challenge to find the markers that would lead to a common definition. Extensive qualitative studies are necessary to study adolescents' understanding about their own identity (e.g., the *Identity Project*; Juang et al., 2022), but also other ways of assessment should be employed. Participants' own opinion about how they see themselves is only one possibility to assess ethnic labels. Another way of looking at ethnic categorisations would be to ask parents, siblings, teachers or peers to which group they would assign a particular participant based on certain beliefs and behaviours. In this way, self-categorisation could be validated by parents' countries of origin and opinions from external observers. Moreover, short-term and long-term longitudinal designs starting from early adolescence to early adulthood could offer insights on how ethnic-racial identity changes, and if the measures used are stable and reliable. Therefore, open questions that should guide future research on this topic are: Which marker of identity is more salient for adolescents and why (e.g., religion, language, traditions)? Is there a match between the self-ascribed ethnic label and the one ascribed by external observers? Where does ethnic identity ends and where does national identity starts? How do adolescents whose parents' belong to different ethnic groups integrate multiple identities? Are they all relevant for framing identity

or does the frequency of engaging with these identities makes a difference? What motivates adolescents to adopt one or both identities? Is there a 'third identity' developing? These and other questions should be considered in future research in order to establish feasible social categories to compare ethnic minority and majority youth.

My studies also emphasized the importance of the school context for a positive development in different ways. Home-to-school contacts, a school and classroom climate based on socio-cultural awareness and engagement with school-related topics were important markers for academic adjustment. However, my findings also highlighted that fixed mindsets (e.g., role of SES) are still present in educational contexts. Therefore, there is a need for empirically based trainings in schools if teachers are to manage diversity successfully. Future interventions with school practitioners and teachers may shed light on beliefs about achievement, expectations effects, intercultural competence and the role of a growth mindset for improving academic results (Müller & Lokhande, 2017). Another important insight regarding school is that the teacher–student relationship is a concept influenced by the perceptions of students and teachers, by the overall school climate and by ethnic heritage. Such a complexity asks for examining different combinations of reports when investigating relationship quality. For instance, my findings showed similar correlations between ethnic minority and majority student-teacher-dyads, but different factors predicted relationship quality in both groups. Future research should investigate in more detail the underlying mechanisms beyond the teacher–student ethnic match. It is definitely useful for research on relationship quality to compare, for example, the views of minority students with minority teachers, and of majority students with minority teachers. However, it would be useful to extend the current findings by examining how educators can be supported to develop the necessary competencies to teach in diverse classrooms (Byrd, 2021), which in turn may improve the relationships between teachers and students. In addition, higher-order effects, such as the classroom and school level of heterogeneity may shape teacher–student interactions in different ways. For instance, in a less diverse school, having a minority teacher may be of high importance for minority students, while in a more diverse school, ethnicity may be less relevant for building positive relationships.

Finally, another important line of research that offers several theoretical and practical implications is the interplay of development and acculturation, which was addressed in Study 3. This longitudinal, person-oriented study highlighted the utility of studying patterns of operating factors rather than individual variables in order to understand developmental outcomes among acculturating youth. A main implication is that both developmental and

acculturation factors need to be considered in research with ethnic minority and majority adolescents, and at the same time, adaptation patterns need to be analysed in relation to a specific context. In terms of future research, it would be useful to extend the current findings by examining other positive developmental outcomes, such as emotional self-regulation or school enjoyment, and by including more ethnic groups.

Taken together, this dissertation shows that inclusive comparative research requires choosing a comprehensive theoretical framework, establishing relevant social categories for the research questions, and following different methodological specifications. If done well, ethnic comparative research has the potential to bring groups together, contribute to a positive, resource-oriented adjustment of adolescents, and provide valuable knowledge for practitioners who work with children and adolescents.

7. Conclusion

This dissertation complements previous research with ethnic comparative designs and advances the understanding on positive development among ethnic minority and majority youth. By drawing on theoretical models about the adaptation of ethnic minority adolescents and using innovative methodological approaches, I exemplified how similarities and differences between ethnic groups are the consequence of varying psychological and social mechanisms. In Study 1, I showed how the role of ethnicity can be 'explained away' by contextual variables, such as the home learning environment, which demonstrated that resources make a difference regarding positive trajectories of life satisfaction and academic self-efficacy. In Study 2, I compared relationship quality perceptions of ethnic minority and majority student-teacher-dyads and investigated individual-level and classroom-level predictors to explain the differences in perceptions. These findings demonstrated the importance of comparing ethnic groups because both common (e.g., school climate) and group-specific factors (e.g., teachers' enjoyment while teaching) explained relationship quality. Finally, results from Study 3 emphasized the importance of studying developmental and migration-related factors together in order to establish patterns of social support. Moreover, this study showed that ethnic group membership is only of secondary importance for general developmental outcomes and that age-specific tasks are common for all adolescents. These three studies represent three possibilities to conduct ethnic comparative research with minority and majority youth from a more reflective and resource-oriented perspective. I showed that similarities and differences between ethnic groups should be explained in terms of processes at play and not social categories. Ethnicity is, next to age, gender, race or social class, a fixed characteristic that has no explanatory value and it cannot offer insights for existing educational disparities or adolescents' behaviour and perceptions. My studies show that there are more complex explanations for these processes that can be found especially in youth's immediate developmental contexts, such as learning conditions, school climate or involvement with family and peers, as well as in acculturation-related processes, such as host and heritage orientations or perceived ethnic discrimination. This dissertation represents an inspiration for future studies that aim to dismantle the minority–majority dichotomy and advance understanding of the role of ethnic group status. Upcoming research with youth growing up in superdiverse contexts requires a rigorous and high-quality methodology in order to reduce disparities and promote an unbiased representation of adolescents' developmental processes.

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