

ORIGINAL ARTICLE

Peer inclusion and school equality norm associations with intergroup contact, and academic self-efficacy amongst ethnic majority and ethnic minority youth

Shelley McKeown¹  | Gian Antonio Di Bernardo² | Jaysan Charlesford³ |
 Loris Vezzali²  | Thia Sagherian-Dickey⁴

¹Department of Experimental Psychology, University of Oxford, Oxford, UK

²Department of Education and Human Sciences, University of Modena and Reggio Emilia, Modena, Italy

³School of Psychology, University of Plymouth, Plymouth, UK

⁴School of Government and International Affairs, Durham University, Durham, UK

Correspondence

Shelley McKeown, Department of Experimental Psychology, University of Oxford, Anna Watts Building, Radcliffe Observatory Quarter, Woodstock Road, Oxford, OX2 6GG.
 Email: shelley.mckeownjones@psy.ox.ac.uk

Funding information

Economic and Social Research Council, Grant/Award Number: ES/N016203/1

Abstract

Social norms are important predictors of youth attitudes and behaviours. There is substantial evidence that positive and meaningful intergroup contact supported by inclusive norms can have a range of benefits beyond prejudice reduction. The present research explores whether perceived peer inclusion norms and perceived norms of equality in school are associated with better quality and more frequent intergroup contact and in turn, whether these are associated with better academic self-efficacy. To test these assertions, we conducted a cross-sectional survey with ethnic majority and ethnic minority youth aged 11–12 ($n = 629$, 48% female, 43% minority ethnic) attending one of four ethnically diverse secondary schools in England. In support of our hypotheses, we found that both perceived inclusive peer norms and perceived school equality norms were associated with higher quantity and quality of contact for both ethnic majority and minority group youth. An indirect effect was observed whereby perceived peer norms of inclusion and school norms of equality were associated with higher academic self-efficacy through higher quality outgroup contact for both groups. No indirect effect was observed for contact quantity. Findings evidence the importance of perceived peer and school equality norms as well as intergroup contact effects for outcomes that go beyond prejudice reduction, in this case academic self-efficacy.

1 | INTRODUCTION

There is a growing body of literature exploring the effects of perceived supportive norms on a range of youth intergroup attitudes and behaviors. For example, supportive peer norms have been found to be associated with lower levels of sectarian antisocial and higher levels of outgroup prosocial behaviors (McKeown & Taylor, 2018) as well as interest in seeking out cross-group friendships (Cameron et al., 2011). There is also

some evidence that perceived teacher support norms are associated with higher levels of perceived efficacy and in turn, positive societal engagement (McKeown & Taylor, 2022), that inclusive school norms are associated with positive intergroup attitudes (Nesdale & Lawson, 2011) and that a positive school diversity climate can positively influence a range of youth intergroup attitudes and outcomes (Schwarzenhal et al., 2018; 2020). To date, however, most studies exploring norm effects have tended to focus either on school or peer

This is an open access article under the terms of the [Creative Commons Attribution](https://creativecommons.org/licenses/by/4.0/) License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

© 2024 The Authors. *Journal of Applied Social Psychology* published by Wiley Periodicals LLC.

norms in isolation. And whilst these studies have developed a strong empirical base on how norms can influence youth attitudes and behaviors, they are unable to directly test which (if any) of these norms matter more, especially in relation to associations with intergroup contact and wider intergroup contact outcomes. This is important because youth are exposed to a wide range of socializing agents in their lives and if we want to best understand how to intervene and promote better youth outcomes through intergroup contact, we need to understand the effects of these different socializing agents through youth perceptions. For example, the wider school climate can influence youth attitudes and behaviors through signaling how diversity is understood or valued. By contrast, the effects of peers can be such that if whether we interact with people who are different to us or not might depend on whether we think our peers would be supportive of us doing so or instead ostracize us. In other words, we need to explore the situational factors in educational contexts that influence youth contact engagement as highlighted in previous theoretical work (Turner & Cameron, 2016). The present research, therefore, builds on previous understanding by exploring the roles of both perceived peer inclusion and perceived school equality norms on intergroup contact quality and quantity and the consequence that this has for academic self-efficacy. This is under the premise that perceived peer inclusive norms are strong predictors of intergroup contact interest (e.g., Tropp et al., 2014, 2016) and engagement (McKeown & Taylor, 2018), that fostering equality within school contexts can have important intergroup relations consequences (Civitillo et al., 2017), and that intergroup contact can have beneficial effects that translate beyond prejudice reduction. We take this existing research that has explored school and peer interaction norms effects on intergroup contact and youth societal engagement (McKeown & Taylor, 2018) a step further, therefore, by considering school equality norms (rather than school interaction norms) and apply this to academic self-efficacy as another potential outcome of intergroup contact. The potential of intergroup contact to reach beyond the intergroup and within the educational domain is supported by research on both the cognitive liberalization hypothesis (Hodson et al., 2018) which argues that contact can open the mind and increase cognitive flexibility as well as the tertiary transfer effect of contact which argues that contact can boost cognitive functioning (Boin et al., 2021). It is based on these lines of reasoning, therefore, that we argue that intergroup contact, facilitated by perceived supportive norms, has the potential to boost academic self-efficacy.

Compared to outcomes in the intergroup relations domain, the extent to which perceived inclusive peer norms and school equality norms transcend to intergroup contact and in turn, youth academic self-efficacy is under-researched. This is despite important theoretical work arguing for the need to explore norms and school climate as situational factors in understanding contact engagement within educational settings (Turner & Cameron, 2016) as well as that demonstrating contact effects beyond prejudice reduction (Hodson et al., 2018). Of the research that does exist, the majority has focused on ethnic diversity (i.e., physical co-presence in educational settings) rather than the quality or quantity of interactions and their effects, and the findings of this research are not conclusive. For example, findings from the US have indicated that racial diversity, measured as school population, in

education is associated with lower self-esteem for Black youth and lower academic achievement for both Black youth and White youth (Bankston & Caldas, 1997). And, in Europe, more ethnic diversity in school populations has been found to be associated with poorer achievement outcomes for minority group members (Dronkers & Van der Velden, 2013). At the same time, however, there is evidence that intergroup contact and broader ethnic diversity in educational contexts can have positive effects. For example, intergroup contact in schools has been associated with challenging stereotypes (associated with cognitive flexibility), increasing self-efficacy, buffering self-esteem, and increasing creativity and problem-solving (Crisp & Turner, 2011), whilst ethnic diversity in schools, measured via school composition, has been found to be associated as well as stronger pupil progress (Burgess, 2014). Given these contrasting findings, it is vital to determine whether and how inclusive norms can support intergroup contact (when physical co-presence is ensured) and in turn, academic self-efficacy for majority and minority group members—we test this amongst youth attending ethnically diverse secondary schools in the United Kingdom.

1.2 | Peer inclusion and school equality norms

Social norms arguably drive much of human behavior and perhaps unsurprisingly, there is a growing body of research exploring the role of perceived norms to explain intergroup relations and attitudes (e.g., Eller et al., 2007; Viki et al., 2006) as well as in intergroup contact intentions and behaviors (e.g., McKeown & Taylor, 2018; Tropp et al., 2016) amongst youth and adults alike. In the present research we focus specifically on perceived peer inclusion norms and perceived school equality norms, both highlighted as important situational factors in understanding contact engagement for youth in situational settings (Turner & Cameron, 2016). This is because peers are arguably one of the biggest influences on youth attitudes and behaviors, especially when it comes to choosing with whom to spend their time (Cameron et al., 2011; McKeown & Taylor, 2018; Tropp et al., 2016, 2014). Yet, where youth make their friends is driven primarily by whom they attend school with, especially as youth transition to secondary school. As such, it stands to reason that both perceptions of peers' views and of the wider school normative climate will influence youth interaction choices (see Turner & Cameron, 2016 for a brief overview).

Research on perceived peer norm effects is well established, with evidence demonstrating that peer norms predict children's interracial attitudes (Mahonen et al., 2011) and levels of intergroup anxiety (De Tezanos-Pinto et al., 2010) and further, that perceived inclusion norms are associated with children's increased intentions and willingness to engage in cross-group friendship (Cameron et al., 2011; Tropp et al., 2016, 2014) as well as youth interaction behaviors (McKeown & Taylor, 2018). Youth, however, are also embedded within school contexts and therefore, they might be sensitive to both the rules of their school and the behavior of teachers regarding the management of race relations. Indeed, evidence for the effects of school norms on intergroup attitudes and behaviors comes from several sources. For example, Nesdale and Lawson (2011) found that

school norms of inclusion are associated with more positive outgroup attitudes and further, McKeown and Taylor (2022) found that perceptions of supportive teacher norms were associated with higher levels of collective efficacy and in turn, support for collective action for refugees amongst youth in Belfast. There is also substantial evidence that a positive school diversity climate can have positive impacts on a range of intergroup outcomes including outgroup orientation and perceived discrimination (Schwarzenhal et al., 2018), intercultural competence (Schwarzenhal et al., 2020), and prosocial behaviors (Aral et al., 2022).

It stands to reason that perceived peer inclusion and school equality norms might affect the frequency and quality of intergroup contact that youth experience. Specifically, perceiving peer norms that support interaction with people from other ethnic groups might facilitate youth seeking out contact with outgroup members—or, at least, reducing the extent to which they *avoid* contact (e.g., Plant & Devine, 2003). Similarly, perceiving the school as seeing all groups as equal and valued could arguably lead youth to view a climate that supports diversity and interaction and in turn, facilitate interaction. There is some evidence for this assertion—in a study of German adolescents, Schwarzenhal et al. (2020) found that youth who perceived a school climate that promoted contact reported higher levels of intercultural competence which, if taken a step further, could indicate being more likely to engage in intergroup contact. More widely, this assertion aligns with the original idea posited by Allport (1954) that intergroup contact works best in reducing prejudice when it occurs under a series of conditions; one of which of those being social or institutional support; in other words, a supportive normative climate is more likely to lead to positive and meaningful intergroup contact, which in turn reduces prejudice. Therefore, it could be posited that perceiving more inclusive peer and more supportive school equality norms might be associated with having more frequent intergroup contact. Relatedly, perceiving peers as being supportive of interaction and schools as holding equality norms might be associated with individuals entering contact with more positive expectations, and thereby resulting in them experiencing more high-quality contact (i.e., a self-fulfilling prophecy; Pinel, 2002). Based on these assertions, we hypothesize that perceiving peers as being supportive of intergroup contact and perceiving the school as holding norms of equality will be associated with both higher reported frequency and quality of intergroup contact amongst youth in diverse school contexts. We also hypothesize that this contact will, in turn, influence youth educational functioning in the form of academic self-efficacy. In other words, we propose that intergroup contact will mediate the relationship between norms and academic self-efficacy.

1.3 | Intergroup contact and academic self-efficacy

At the most basic level, the contact hypothesis (Allport, 1954) claims that bringing groups in conflict together under favorable circumstances will reduce prejudice and improve intergroup relations. Educational institutions represent a natural setting in which to explore the promotion and effects of intergroup contact as, for many young people, it may be the first place where they meet someone

from a different ethnic group. The social effects of educational diversity and intergroup contact, such as reduced prejudice, are well-documented (e.g., Bekerman & Horenczyk, 2004; Hughes, 2013; Husnu & Crisp, 2010; Maoz, 2002; Stathi et al., 2014), but the effects on educational outcomes are contested. Some argue that ethnic diversity in educational settings, typically measured through school composition, promotes learning outcomes (Denson & Chang, 2009) and pro-social behaviors (Spivak et al., 2015); others argue that ethnic diversity in schools can impede the achievement of such outcomes or is less effective for minority group members (Dronkers & Van der Velden, 2013). To fully understand these differing effects, we argue that it is important to move beyond measures of ethnic composition and instead, focus on the quality and quantity of interactions taking place. In other words, intergroup contact experiences. Evidence in support of this argument can be found in the work of Gurin et al. (2002) who found that informal interactions (taking place outside the classroom) were particularly associated with a positive relationship between diversity and learning outcomes, compared to diversity within the classroom and structural diversity, in order words physical co-presence. They argued that diverse peers can learn from each other, and that diversity enables individuals to take on the perspective of others. Moreover, it enables stereotypes to be challenged (Crisp & Turner, 2011) and can reduce stereotype threat, which can in turn promote better academic performance (Aronson et al., 2001).

The effects of ethnic diversity and intergroup contact can, however, vary depending on group status. For example, Bankston and Caldas (2002) argue that diversity in education may not always be desirable for minority group members and Gurin et al. (2002) found a negative relationship between classroom diversity and self-assessed academic skills for Black students in the US context. These findings align with research which shows that intergroup contact experiences and outcomes differ for minority and majority group members (Tropp & Pettigrew, 2005). Further evidence for differential effects of intergroup contact on academic outcomes comes from Bagci et al. (2017) in their study of UK youth, where it was found that, among ethnic minority South Asian children (vs. their majority White peers), there was an indirect effect whereby higher cross-group friendship quality was associated with higher affirmation and, in turn, better academic outcomes. We argue, therefore, that to understand how and when contact is associated with academic self-efficacy, acknowledging the experiences of different ethnic groups within the school context is vital.

1.4 | Academic self-efficacy

In the present research, we focus on academic self-efficacy as our key outcome variable to provide an important test of the potential effects of intergroup contact beyond prejudice in educational contexts, in our case supported through inclusive peer norms and school equality norms. Broadly, self-efficacy is an individual's belief that they will be successful at achieving a goal, and such beliefs predict aspirations, motivations, and

performance (Bandura, 1977, 1993). Academic self-efficacy, then, more specifically can be understood as the extent to which individuals can perform in academic tasks (Ferla et al., 2009). Whilst there is theorizing on the potential of intergroup contact beyond prejudice reduction, both in terms of the cognitive liberalization hypothesis (Hodson et al., 2018) and the tertiary transfer effect of contact (Boin et al., 2021), few studies have explicitly tested the role of intergroup contact, as supported by inclusive peer and school equality norms, on academic self-efficacy as a form of educational functioning.

We argue that it stands to reason that academic self-efficacy may vary depending on the nature of intra- and intergroup contact interactions within the school context, especially given that previous research has stressed the situational nature of self-efficacy (Linnenbrink & Pintrich, 2002). Consistent with this claim, there is some evidence that ethnic and racial diversity can increase self-efficacy (Crisp & Turner, 2011), an effect that may be explicable at least partially by increased intergroup contact amidst such diversity. It should be noted here, however, that Bagci et al. (2017) did not find a relationship between cross-group friendship quality and academic outcomes (which included self-efficacy as a measure alongside grades) and so, this alongside the contrasting research on the effects of diversity on education means that we do need to be open to the idea that the relationship between norms, contact, and academic self-efficacy across majority and minority groups may be complex. And as such, it is difficult to hypothesize expected effects within this domain separately for each of these groups. We do, however, posit that given that academic self-efficacy predicts educational outcomes (Elias & Loomis, 2002), and that individuals tend toward those tasks that they believe they will be successful in (Bandura, 1977), higher quantity and quality of intergroup contact might predict better academic self-efficacy. This is in line with the cognitive liberalization hypothesis which claims that intergroup contact can promote positive educational phenomena such as creativity, problem solving, and cognitive flexibility (Hodson et al., 2018), which in our view are likely to be linked to academic self-efficacy (although we do not test this hypothesis in our research).

1.5 | The present research

Building on the reviewed literature, the aim of the present research is to understand the potential effects of perceived inclusive peer norms and school equality norms on intergroup contact quality and quantity and in turn, academic self-efficacy. In other words, the mediational role that intergroup contact might play in the norms—academic self-efficacy relationship. Crucially, we seek to test how these relationships may differ depending on ethnic group status (majority vs. minority) although we do not make specific hypotheses about the direction of these effects due to contradicting findings and as such, our research is exploratory in this regard. We conduct the research among youth attending secondary education in the United Kingdom, a setting of growing ethnic diversity where approximately 19% of the

resident population identify as ethnic minorities—an increase from 9% in 2001, and 6% in 1991 (Office for National Statistics ONS, 2015)—and where 27% of pupils in state funded secondary schools in England and Wales are of minority ethnic origin (Department for Education [DfE], 2015). The UK is a particularly interesting context to examine academic self-efficacy given educational disparities in the United Kingdom. For example, there are racial differences in educational progress and summative attainment during secondary education (Department for Education [DfE], 2017). And whilst we do not explore educational outcomes in our research, it stands to reason that such differential experiences in secondary school might lead to different experiences in higher (vs. secondary) education; whereas a relatively high proportion of ethnic minority people enroll in university courses, Black and minority ethnic (vs. White British) students are less likely to attain a first or upper-second class degree—even controlling for entry qualifications—and Black (vs. White, Chinese, Mixed, and Asian) students are less likely to complete their studies (Higher Education Funding Council for England [HEFCE], 2017). We argue, therefore, that it is important to explore how norms and intergroup might be associated with academic self-efficacy and broader measures of educational functioning due to these potential knock-on consequences.

Based on the reviewed literature, it was hypothesized that:

1. Perceived inclusive peer norms and school equality norms will be associated with higher frequency and better-quality intergroup contact.
2. Higher frequency and better-quality intergroup contact will be associated with better academic self-efficacy.
3. Perceived inclusive peer norms and school equality norms will be associated with stronger academic self-efficacy through higher frequency and better-quality intergroup contact.

We also test whether findings will differ for majority and minority group members but as noted above due to contradictory evidence to date as to what the direction of these effects might be. We do not specify directional hypotheses.

2 | METHODS

2.1 | Participants and recruitment

The present research forms part of a larger study on intergroup relations and educational functioning amongst youth attending ethnically diverse secondary schools in England. Participants were Year 7 (aged 11–12 years) students in the first year of secondary education in a cosmopolitan city in England. We focused on this age group because this is the first year that young people attend secondary education and as such, they have just experienced a transition to a new school environment with new opportunities for intergroup contact. As we were interested in exploring intergroup contact, we purposefully recruited schools that had students enrolled from a range of ethnic minority as well as ethnic majority students.

We contacted all secondary schools in the region with at least 30% of ethnic minority students enrolled at the stage of grant application writing. Following expressions of interest from three schools, meetings were held to discuss the wider project, and all three agreed to take part. A further school was recruited following securing of the grant funding.

A total of 629 youth took part in the first survey wave of the project across the four participating schools; 356 participants identified themselves as White (majority group, 181 female, 171 male, 3 preferred not to say, 1 missing data) while 273 (minority group) indicated to be either Asian ($N = 110$, 48 female, 58 male, 4 preferred not to say) or Black ($N = 163$, 71 female, 88 male, 4 preferred not to say). An a priori power analysis showed that 242 represented the minimum required sample size allowing a power of 0.80 to detect a small to medium effect size ($f^2 = 0.05$) for running a multiple regression model with four predictors.

2.2 | Measures

In addition to completing a series of demographic measures, including date of birth, gender, and ethnic ingroup, youth participants completed the following measures (as well as a wider list of measures as part of the broader project) in paper and pencil format.

2.2.1 | Peer inclusion norms

Perceived positive peer norms about having contact with the outgroup was measured with four items ("Friends from my racial group want to be friends with young people from other racial groups"; "Friends from my racial group would be happy if I became friends with young people from other races"; "Friends from my racial group encourage me to make friends with young people from other races"; "Friends from my racial group like it when I 'hang out' or spend time with young people from other races") taken from Tropp et al. (2014). Responses ranged from 1 (*Not at all*) to 5 (*Very much*). Reliability was excellent for both subgroups ($\alpha_{\text{majority}} = .79$; $\alpha_{\text{minority}} = .87$).

2.2.2 | School equality norms

Participants rated their perceptions about their school's favorable attitudes toward group equality using four items ("The school rules say that all racial groups should be treated fairly"; "The school rules do not favor one racial group over another" reversed coded; "The school rules ensure that decisions that affect pupils of all racial groups are based on facts, not personal opinions"; "The school rules are equally fair to all racial groups"). Responses were provided on a 7-step scale where 1 corresponded to *Strongly disagree* and 7 to *Strongly agree*. Reliability was acceptable for both subgroups ($\alpha_{\text{majority}} = .70$; $\alpha_{\text{minority}} = .75$).

2.2.3 | Quantity of contact

Three items measured quantity of contact in different contexts (i.e., at school, in the neighborhood, across all social situations) adapted from Tam et al. (2009). Because the questionnaire was distributed in a paper and pencil version, all participants responded about items toward three ethnic groups: White, Black, and Asian. For the present paper the outgroup target was determined based on participants' racial ingroup: for Whites the outgroup was represented by Blacks and Asians; for the minority, Whites was the outgroup. Responses ranged from 1 (*None*) to 7 (*A lot*). Reliability was acceptable for both subgroups ($\alpha_{\text{majority}} = .82$; $\alpha_{\text{minority}} = .74$).

2.2.4 | Quality of contact

Perceptions of contact quality with majority/minority group members was assessed with three bipolar items (unpleasant/pleasant; compete/work together; casual/meaningful) from Tam et al. (2009). Similarly with quantity of contact, all participants responded about items toward the three ethnic groups and the outgroup target as calculated according to the participant's ethnic group identity. On a 7-step scale, 1 represented the negative pole and 7 the positive pole. Reliability was acceptable for both subgroups ($\alpha_{\text{majority}} = .68$; $\alpha_{\text{minority}} = .57$).

2.2.5 | Academic self-efficacy

We measured academic self-efficacy with six items adapted from Roeser et al. (1996) and the Patterns of Adaptive Learning Survey (Midgley et al., 1995) ("I'm certain I can perfect the skills taught in school this year"; "I can do even the hardest school work if I try"; "If I have enough time, I can do a good job on all of my school work"; "I can do almost all the work in school if I don't give up"; "even if the work is hard in school, I can learn it"; "I'm certain I can figure out how to do the most difficult school work"). Responses were provided on a 7-step scale where 1 corresponded to *Not at all true of me* and 7 to *Very true of me*. Reliability was acceptable for both subgroups ($\alpha_{\text{majority}} = .87$; $\alpha_{\text{minority}} = .87$).

2.3 | Procedure

Before data collection, ethical approval was obtained from Anonymous University. Once ethical approval was secured, interested schools were recontacted and a copy of the research proposal as well as project information sheet and consent form were shared. Upon confirmation of agreement to take part in the research, all parents were sent an information sheet and opt-out consent form for their child. Teachers were then informed of any parental opt-outs before data collection. Data were collected during normal schooling hours from 32 classes, eight in each the four recruited secondary schools, by trained

researchers in June and July 2017. Participants, who took part within their classrooms, each received a paper and pen questionnaire pack containing information on the purposes of the research and their ethical rights. Before participation, a member of the research team also verbally reiterated participants' right to withdraw from the study without penalty and that individuals could choose not to respond to any item for any reason. Participants were asked to provide written opt-in consent if they wished to take part in the project. Following this, participants were asked to complete the survey by providing demographic information, and a completed a series of measures, explained above. The survey took approximately 30 minutes to complete.

3 | RESULTS

Composite scores for each measure were created by averaging the relative items. Descriptive statistics and correlations can be found in Tables 1 and 2. As can be seen from Table 1, ethnic majority group youth reported higher perceived peer inclusion norms compared to the ethnic minority youth; conversely, no differences emerged for school equality norms, namely majority group youth indicated the same level of perceived school equality norms compared to ethnic minority youth. Regarding contact, not surprisingly, ethnic minority youth reported having more outgroup contact than the majority group, but no difference emerged for quality of contact, indicating that both ingroups have equally positive interactions. Finally, it emerged that ethnic minority youth reported higher levels of academic self-efficacy compared to ethnic majority group youth although both groups scored highly.

3.1 | Moderated mediation analysis

To test our hypotheses, and to explore potential group (i.e., majority vs. minority) differences, a multiple regression moderated mediation model

TABLE 1 Means (standard deviations) of the constructs.

Variables	Majority (N = 356)	Minority (N = 273)	t(627)	Cohen's d
Peer inclusion norms	3.84 (0.97)	3.58 (1.16)	2.93**	0.24
School equality norms	6.18 (1.02)	6.06 (1.09)	1.39	0.11
Quantity of contact	3.59 (1.52)	4.63 (1.78)	7.70***	0.63
Quality of contact	4.75 (1.05)	4.64 (1.50)	1.02	0.09
Academic self-efficacy	5.32 (1.20)	5.58 (1.23)	2.78**	0.21

Note: All measures had a 7-step scale but ingroup inclusion norms (5-step).

** $p < .01$; *** $p < .001$.

TABLE 2 Zero-order correlations between variables for majority (N = 356) and minority group (N = 273).

Variable	1	2	3	4	5
1 Peer inclusion norms	-	.22***	.42***	.44***	.33***
2 School equality norms	.23***	-	.19**	.14*	.30***
3 Quantity of contact	.31***	.23***	-	.53***	.24***
4 Quality of contact	.37***	.23***	.36***	-	.35***
5 Academic self-efficacy	.25***	.28***	.06	.23***	-

Note: Correlations for majority group are reported below the diagonal; correlations for minority group, below the diagonal; ingroup inclusion norms had a 5-step response scale, while responses for the other measures were provided on a 7-step scale.

* $p < .05$; ** $p < .01$; *** $p < .001$.

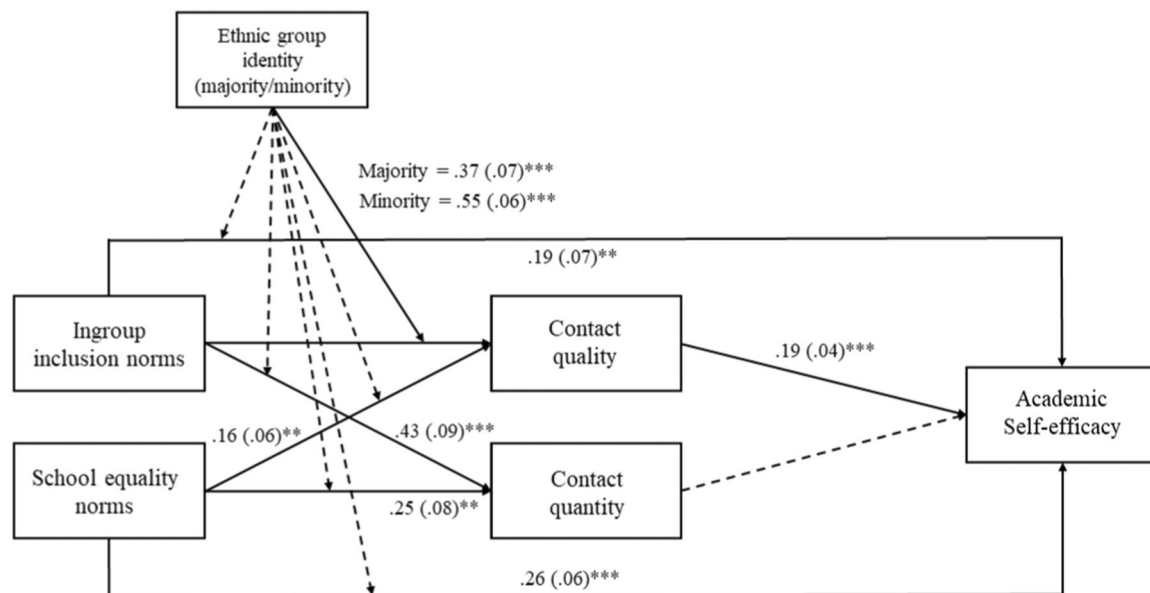
was tested using the PROCESS macro for SPSS (Model = 8; Hayes, 2013); bootstrapping procedures (5000 resamples) were used for assessing the significance of the indirect effects. In the model, peer inclusion norms and school equality norms were included as exogenous variables; quality and quantity of contact with the outgroup were the mediators, predicted by both predictors, in parallel, while academic self-efficacy was the criterion variable, predicted by both mediators and by independent variables; finally, ethnic group members as majority/minority (and relative interactions with the exogenous variables) was included as moderator, tested in the relation between the independent variables with the mediators, and in the direct association between the independent variables and the dependent variable. In support of hypothesis 1, results showed that both peer inclusion and school equality norms were positively related to both intergroup contact quality and quantity. In support of hypothesis 2, intergroup quality was positively associated with enhanced academic self-efficacy, but no relationship was found between intergroup contact quantity and academic self-efficacy. In addition, ethnic group membership status moderated the relations between peer norms and contact quality; however, simple slopes analysis showed that both coefficients (i.e., for majority and minority) turned out being positive and significant; no other paths were moderated (see Table 3 and Figure 1).

Bootstrapping analysis provided support for hypothesis 3, confirming the significance of the peer inclusion norms → quality of contact → academic self-efficacy path for both majority, *mean effect* = 0.0692 (*SE* = 0.02), 95% CI: [0.0356–0.1152], and minority group participants, *mean effect* = 0.1069 (*SE* = 0.03), 95% CI: [0.0570–0.1721]; further, also the path for school equality norms → quality of contact → academic self-efficacy path turned out being significant, *mean effect* = 0.0225 (*SE* = 0.01), 95% CI: [0.0049–0.0523]. No other significant indirect path emerged, specifically, considering the path from peer norms to academic self-efficacy, via quantity of contact, for majority, *mean effect* = −0.0197 (*SE* = 0.02), 95% CI: [−0.0535 to 0.0051], and minority group, *mean effect* = −0.0280 (*SE* = 0.02), 95% CI: [−0.0702 to 0.1168]; nor for the paths from school equality norms to academic self-efficacy, mediated by contact quantity, *mean effect* = −0.0097 (*SE* = 0.01), 95% CI: [−0.0300 to 0.0018].¹

TABLE 3 Results of the moderated mediation regression analyses ($N = 629$). Unstandardized (standard errors in parentheses) regression coefficients are reported.

Predictors		Dependent variables		
		Contact quantity	Contact quality	Academic self-efficacy
Peer inclusion norms	(a1)	0.43 (0.09)***	0.36 (0.07)***	0.19 (0.07)**
School equality norms	(a2)	0.25 (0.08)**	0.16 (0.06)**	0.26 (0.06)***
Ethnic group identity (0 = majority, 1 = minority)	(b)	0.99 (0.78)	-0.08 (0.58)	0.25 (0.57)
Interaction (a1 $\times$ b)		0.18 (0.12)	0.19 (0.09)*	0.03 (0.09)
Interaction (a2 $\times$ b)		-0.07 (0.12)	-0.10 (0.09)	0.01 (0.09)
Quantity of contact		-	-	-0.05 (0.03)
Quality of contact		-	-	0.19 (0.04)***
R^2		0.23	0.18	0.18
f^2		0.30	0.22	0.22
F		37.45***	27.30***	19.02***
df		(5623)	(5623)	(7621)

* $p < .05$; ** $p < .01$; *** $p < .001$.

**FIGURE 1** Moderated mediation analysis of the relation norms and academic self-efficacy via the indirect effect of contact quantity and quality ($N = 629$). Unstandardized coefficients are reported (standard errors in parentheses). Solid lines represent significant coefficients while dotted lines indicate nonsignificant associations. ** $p < .01$, *** $p < .001$.

4 | DISCUSSION

The present research aimed to explore the effects of perceived inclusive peer norms and perceived school equality norms on intergroup contact quality and quantity and, in turn, academic self-efficacy amongst ethnic majority and ethnic minority youth attending ethnically diverse secondary schools in England. Our analyses

revealed partial support for our hypotheses. First, we found that both perceived peer norms of inclusion and school norms of equality were associated with both higher quantity and quality of contact for both ethnic majority and minority group youth, supporting Hypothesis 1. In partial support of our second hypothesis, we found that contact quality (but not quantity) was associated with higher levels of academic self-efficacy amongst both ethnic majority and minority

group youth. Further, in partial support of hypothesis 3, an indirect effect was observed whereby both perceived inclusive peer norms and school equality norms were associated with higher academic self-efficacy through higher quality outgroup contact—for both ethnic minority and ethnic majority group youth but no mediation effect, however, was observed for the relationship between either peer inclusion norms or school equality norms, contact quality and academic self-efficacy. We discuss these findings in relation to the broader research literature.

Our finding that perceived norms of inclusion are associated with both quantity and quality of intergroup contact for both ethnic majority and ethnic minority group participants offers further empirical support for the important role that peer norms can play in understanding intergroup contact engagement and experiences. This includes research which has demonstrated that perceived inclusive peer norms are strong predictors of intergroup contact interest (e.g., Tropp et al., 2016, 2014) and engagement (McKeown & Taylor, 2018) and that they are important situational factors in understanding contact engagement (Turner & Cameron, 2016). Importantly, we also provide evidence for the potential positive role that perceived school equality norms can play in understanding youth intergroup contact engagement and experiences. Specifically, we find that perceived school equality norms are associated with both quantity and quality of intergroup contact for both ethnic majority and ethnic minority group participants. This finding extends emerging literature that demonstrates how a positive school diversity climate can influence intercultural competence (Schwarzenthall et al., 2020) by directly measuring the relationship between perceptions of school equality norms with contact quantity and contact quality. It also opens up avenues to further explore the relationship between school equality norms and intergroup contact engagement experimentally or longitudinally to better determine causal processes.

Our findings also show that intergroup contact quality, but not quantity, was found to be associated with more positive academic self-efficacy for both ethnic majority and minority youth. This makes three important contributions to the research literature. First, it demonstrates that good quality intergroup contact can have positive effects beyond prejudice reduction within the educational domain—offering further support for the need to promote better quality contact amongst ethnic groups in educational settings in line with the cognitive liberalization hypothesis (Hodson et al., 2018). Second, it provides evidence that good quality contact can have positive efficacy effects for both majority and minority group members; this contrasts with some previous research on achievement and efficacy (e.g., Bankston & Caldas, 1997; Dronkers & Van der Velden, 2013) but it may be that we observed these findings because we explored intergroup contact rather than ethnic diversity alone which relates to our third contribution—that we observe intergroup contact quality as being most important in terms of being associated with academic self-efficacy, not intergroup contact quantity. This finding further bolsters our argument that it is important to move beyond measures of simple ethnic co-presence to truly understand the effects of diversity on youth outcomes. In other words, it could be the nature of

the interaction, rather than the opportunity for interaction or the number of interactions, that influences youth outcomes within the educational context. We note here, however, that this finding does not fully align with research by Bagci et al. (2017), which found that contact was not associated with academic outcomes for majority and minority group youth. It would be interesting to further explore these relations in terms of different forms of educational functioning as well as considering the potential effects of negative intergroup contact.

Our finding that both perceived peer inclusion norms and school equality norms were associated with higher scores in academic self-efficacy through intergroup contact quality for both majority and minority group members demonstrates the importance of norms at different levels of the social ecology for potentially promoting youth contact and in turn, their efficacy within the educational domain. Whilst substantial research has examined the effects of different norms on youth intergroup related outcomes (Cameron et al., 2011; McKeown & Taylor, 2018; Schwarzenthall et al., 2018, 2020) and some the effects of ethnic diversity or intergroup contact on youth educational outcomes (Bagci et al., 2017; Dronkers & Van der Velden, 2013) to our knowledge few studies have explored the potential links that there may be between norms, contact, and youth education related outcomes such as academic self-efficacy. And yet, we demonstrate here that such links may be important. If we know, for example, that intergroup contact can have cognitive liberalization (Hodson et al., 2018) and tertiary transfer effects (Boin et al., 2021) with implications for youth academic self-efficacy and potentially their educational performance then it would stand to reason that it would be important to develop ways to promote positive and meaningful intergroup contact within educational settings. And whilst it may be difficult to change perceived peer norms of interaction, it may be possible to change perceived school climate norms—for example by promoting diversity ideologies within the school environment. Our findings also offer some support for the idea that it is the broader school climate rather than the extent to which teachers themselves support interactions taking place that is influential on youth intergroup contact, aligning with previous research by McKeown and Taylor (2018) who found that perceived peer interaction norms but not perceived school interaction norms were associated with intergroup contact and in turn, youth positive intergroup behaviors. Future research, therefore, should aim to explore the potential comparative effects of school norms of interaction and school norms of equality on contact and in turn, outcomes that include prejudice reduction and beyond as we do not directly test this assertion in the present research.

4.1 | Limitations and future directions

Whilst our findings make a contribution to current understanding, it is important to acknowledge the limitations of our research. First, our research is based on a cross-sectional survey which means that we cannot make causal claims about our findings. Future research should

aim to address this by conducting longitudinal research to examine the relationships between norms, contact and academic self-efficacy over time or by experimentally examining how priming norms of inclusion or equality impacts upon intergroup contact behaviors and in turn, education related outcomes. Such approaches might also help to inform the different ways in which the school context can influence intergroup contact as well as further knock-on effects although experimental approaches in this domain would need careful ethical consideration to prevent potential negative effects. Second, our research is based on exploring ethnic majority and ethnic minority group perspectives which is important when so much research has considered majority group perspectives only, but this still neglects the complexity of group relations between majority and minority groups as well as between minority groups. Future research should aim to move beyond the two-group paradigm to consider a wider range of groups, including inter-minority contact, which unfortunately due to our small sample size we were unable to do in this research. It could be, for example, that different ethnic minority groups benefit from intergroup contact to a varied extent, and in different ways. Third, we chose to focus on a specific form of educational functioning in terms of academic self-efficacy. It may be that to truly understand tertiary or potential cognitive liberalization effects of intergroup contact we need to consider a wider range of educational functioning variables—for example creativity and problem solving—thereby promoting deeper understanding into which factors contact quantity and quality might be associated with and how this might vary across ethnic groups. It would also be useful to consider the additive effects on outcomes such as performance.

5 | CONCLUSION

In summary, the present research offers an important exploration of the effects of both perceived peer inclusion and school equality norms and intergroup contact on academic self-efficacy amongst both majority and minority group relations, moving beyond explorations of the prejudice reduction effects of contact and of explorations of mere physical co-presence effects on measures of educational functioning. Our main finding is that perceived peer inclusion norms and school equality norms were associated with better academic self-efficacy through intergroup contact quality for both majority and minority group members; this provides important further evidence for the role of perceived norms at different levels of the socio-ecology on youth-reported intergroup contact quality, as well as the powerful effects of intergroup contact on academic self-efficacy, for both majority and majority group youth. These findings have implications for both research and for practice. They offer up research opportunities to further explore the effects of norms and intergroup contact on educational outcomes, whilst also opening ideas on how researchers and practitioners might seek to boost academic self-efficacy in schools amongst youth, for example, by promoting supportive peer norms, building a positive school diversity climate, and by boosting the quality of intergroup contact within and outside of the school settings.

ACKNOWLEDGMENTS

This work was supported by funding obtained from the Economic and Social Research Council [ES/N016203/1]. Our deep appreciation to the numerous school administrators, teachers, and pupils for participating in this project.

DATA AVAILABILITY STATEMENT

Research data are not shared.

ORCID

Shelley McKeown  <http://orcid.org/0000-0002-3837-3692>

Loris Vezzali  <https://orcid.org/0000-0001-7536-9994>

ENDNOTE

- ¹ Results did not change when controlling for gender and, due to the nested nature of the data, for school (using the “cluster” command in PROCESS). Gender was significantly associated with contact quality, that is, girls reported better quality contact than boys.

REFERENCES

- Allport, G. W. (1954). *The nature of prejudice*. Addison-Wesley.
- Aral, T., Schachner, M. K., Juang, L., & Schwarzenhal, M. (2022). Cultural diversity approaches in schools and adolescents' willingness to support refugee youth. *British Journal of Educational Psychology*, 92(2), 772–799. <https://doi.org/10.1111/bjep.12458>
- Aronson, J., Fried, C. B., & Good, C. (2001). Reducing the effects of stereotype threat on African American college students by shaping theories of intelligence. *Journal of Experimental Social Psychology*, 38(2), 118–125. <https://doi.org/10.1006/jesp.2001.1491>
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191–215. [https://doi.org/10.1016/0146-6402\(78\)90002-4](https://doi.org/10.1016/0146-6402(78)90002-4)
- Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist*, 28(2), 117–148. https://doi.org/10.1207/s15326985ep2802_3
- Bankston, C. L., & Caldas, S. J. (2002). *A troubled dream: The promise and failure of school desegregation in Louisiana*. Vanderbilt University Press.
- Bagci, S. C., Kumashiro, M., Rutland, A., Smith, P. K., & Blumberg, H. (2017). Cross-ethnic friendships, psychological well-being, and academic outcomes: Study of South Asian and White children in the UK. *European Journal of Developmental Psychology*, 14(2), 190–205. <https://doi.org/10.1080/17405629.2016.1185008>
- Bankston, C. L., & Caldas, S. J. (1997). Effect of school population socioeconomic status on individual academic achievement. *Journal of Experimental Sociology*, 90(5), 269–277. <https://www.jstor.org/stable/27542104>
- Bekerman, Z., & Horenczyk, G. (2004). Arab-Jewish bilingual coeducation in Israel: A long-term approach to intergroup conflict resolution. *Journal of Social Issues*, 60(2), 389–404. <https://doi.org/10.1111/j.0022-4537.2004.00120.x>
- Boin, J., Rupar, M., Graf, S., Neji, S., Spiegler, O., & Swart, H. (2021). The generalization of intergroup contact effects: Emerging research, policy relevance, and future directions. *Journal of Social Issues*, 77(1), 105–131. <https://doi.org/10.1111/josi.12419>
- Burgess, S. (2014). Understanding the success of London's schools. Centre for Market and Public Organisation, University of Bristol. Retrieved September 2, 2015, from <http://www.bristol.ac.uk/media-library/sites/cmpo/migrated/documents/wp333.pdf>

- Cameron, L., Rutland, A., Hossain, R., & Petley, R. (2011). When and why does extended contact work? The role of high quality direct contact and group norms in the development of positive ethnic intergroup attitudes amongst children. *Group Processes & Intergroup Relations*, 14, 193–206. <https://doi.org/10.1177/1368430210390535>
- Civitillo, S., Schachner, M., Juang, L., van de Vijver, F. J., Handrick, A., & Noack, P. (2017). Towards a better understanding of cultural diversity approaches at school: A multi-informant and mixed-methods study. *Learning, Culture and Social Interaction*, 12, 1–14. <https://doi.org/10.1016/j.lcsi.2016.09.002>
- Crisp, R. J., & Turner, R. N. (2011). Cognitive adaptation to the experience of social and cultural diversity. *Psychological Bulletin*, 137(2), 242–266. <https://doi.org/10.1037/a0021840>
- Denson, N., & Chang, M. J. (2009). Racial diversity matters: The impact of diversity-related student engagement and institutional context. *American Educational Research Journal*, 46(2), 322–353.
- Department for Education [DfE]. (2015). Schools, pupils and their characteristics. Retrieved July 5, 2015, from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/433680/SFR16_2015_Main_Text.pdf
- Department for Education [DfE]. (2017). Schools, pupils and their characteristics. Retrieved January 10, 2018, from <https://www.gov.uk/government/statistics/schools-pupils-and-their-characteristics-january-2017>
- Dronkers, J., & Van der Velden, R. (2013). Positive but also negative effects of ethnic diversity in schools on educational performance? An empirical test using PISA data. In M. Windzio (Ed.), *Integration and inequality in educational institutions* (pp. 71–98). Springer. https://doi.org/10.1007/978-94-007-6119-3_4
- Elias, S. M., & Loomis, R. J. (2002). Utilizing need for cognition and perceived self-efficacy to predict academic performance. *Journal of Applied Social Psychology*, 32(8), 1687–1702. <https://doi.org/10.1111/j.1559-1816.2002.tb02770.x>
- Eller, A., Abrams, D., Viki, G. T., Imara, D. A., & Peerbux, S. (2007). Stay cool, hang loose, admit nothing: Race, intergroup contact, and public-police relations. *Basic and Applied Social Psychology*, 29(3), 213–224. <https://doi.org/10.1080/01973530701503036>
- Ferla, J., Valcke, M., & Cai, Y. (2009). Academic self-efficacy and academic self-concept: Reconsidering structural relationships. *Learning and Individual Differences*, 19(4), 499–505.
- Gurin, P., Dey, E., Hurtado, S., & Gurin, G. (2002). Diversity and higher education: Theory and impact on educational outcomes. *Harvard Educational Review*, 72(3), 330–367. <https://doi.org/10.17763/haer.72.3.01151786u134n051>
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Press.
- Higher Education Funding Council for England [HEFCE]. (2017). Student characteristics. Retrieved January 10, 2018, from <http://www.hefce.ac.uk/analysis/HEinEngland/students/>
- Hodson, G., Crisp, R. J., Meleady, R., & Earle, M. (2018). Intergroup contact as an agent of cognitive liberalization. *Perspectives on Psychological Science*, 13(5), 523–548. <https://doi.org/10.1177/1745691617752324>
- Hughes, J. (2013). Contact and context: Sharing education and building relationships in a divided society. *Research Papers in Education*, 2, 1–18. <https://doi.org/10.1080/02671522.2012.754928>
- Husnu, S., & Crisp, R. J. (2010). Imagined intergroup contact: A new technique for encouraging greater inter-ethnic contact in Cyprus. *Peace and Conflict: Journal of Peace Psychology*, 16(1), 97–108. <https://doi.org/10.1080/10781910903484776>
- Linnenbrink, E. A., & Pintrich, P. R. (2002). Motivation as an enabler for academic success. *School Psychology Review*, 31(3), 313–327. <https://doi.org/10.1080/02796015.2002.12086158>
- Mähönen, T. A., Jasinskaja-Lahti, I., & Liebkind, K. (2011). The impact of perceived social norms, gender, and intergroup anxiety on the relationship between intergroup contact and ethnic attitudes of adolescents 1. *Journal of Applied Social Psychology*, 41(8), 1877–1899. <https://doi.org/10.1111/j.1559-1816.2011.00793.x>
- Maoz, I. (2002). Is there contact at all? Intergroup interaction in planned contact interventions between Jews and Arabs in Israel. *International Journal of Intercultural Relations*, 26(2), 185–197. [https://doi.org/10.1016/S0147-1767\(01\)00046-3](https://doi.org/10.1016/S0147-1767(01)00046-3)
- McKeown, S., & Taylor, L. K. (2018). Perceived peer and school norm effects on youth antisocial and prosocial behaviours through intergroup contact in Northern Ireland. *British Journal of Social Psychology*, 57, 652–665. <https://doi.org/10.1111/bjso.12257>
- McKeown, S., & Taylor, L. K. (2022). Perceived teacher support, collective efficacy in school, and constructive engagement among youth in a conflict-affected society. *TPM: Testing, Psychometrics, Methodology in Applied Psychology*, 29, 85–96. <https://doi.org/10.4473/TPM29.1.7>
- Midgley, C., Maehr, M. L., Hicks, L., Urdan, T. U., Roeser, R. W., Anderman, E., & Kaplan, A. (1995). *Patterns of adaptive learning survey (PALS) manual*. University of Michigan.
- Nesdale, D., & Lawson, M. J. (2011). Social groups and children's intergroup attitudes: Can school norms moderate the effects of social group norms? *Child Development*, 82(5), 1594–1606. <https://doi.org/10.1111/j.1467-8624.2011.01637.x>
- Office for National Statistics [ONS]. (2015). 2011 census analysis: Ethnicity and religion of the non-UK born population in England and Wales. Retrieved July 3, 2015, from http://www.ons.gov.uk/ons/dcp171776_407038.pdf
- Pinel, E. C. (2002). Stigma consciousness in intergroup contexts: The power of conviction. *Journal of Experimental Social Psychology*, 38(2), 178–185. <https://doi.org/10.1006/jesp.2001.1498>
- Plant, E. A., & Devine, P. G. (2003). The antecedents and implications of interracial anxiety. *Personality and Social Psychology Bulletin*, 29, 790–801. <https://doi.org/10.1177/0146167203029006011>
- Roeser, R. W., Midgley, C., & Urdan, T. C. (1996). Perceptions of the school psychological environment and early adolescents' psychological and behavioral functioning in school: The mediating role of goals and belonging. *Journal of Educational Psychology*, 88, 408–422.
- Schwarzenthall, M., Schachner, M. K., van de Vijver, F. J. R., & Juang, L. P. (2018). Equal but different: Effects of equality/inclusion and cultural pluralism on intergroup outcomes in multiethnic classrooms. *Cultural Diversity and Ethnic Minority Psychology*, 24(2), 260–271. <https://doi.org/10.1037/cdp0000173>
- Schwarzenthall, M., Schachner, M. K., Juang, L. P., van de Vijver, F. J. R. (2020). Reaping the benefits of cultural diversity: Classroom cultural diversity climate and students' intercultural competence. *European Journal of Social Psychology*, 50, 323–346. <https://doi.org/10.1002/ejsp.2617>
- Spivak, A. L., White, S. S., Juvonen, J., & Graham, S. (2015). Correlates of prosocial behaviors of students in ethnically and racially diverse middle schools. *Merrill-Palmer Quarterly*, 61(2).
- Stathi, S., Cameron, L., Hartley, B., & Bradford, S. (2014). Imagined contact as a prejudice-reduction intervention in schools: The underlying role of similarity and attitudes. *Journal of Applied Social Psychology*, 44(8), 536–546. <https://doi.org/10.1111/jasp.12245>
- Tam, T., Hewstone, M., Kenworthy, J., & Cairns, E. (2009). Intergroup trust in Northern Ireland. *Personality and Social Psychology Bulletin*, 35(1), 45–59. <https://doi.org/10.1177/0146167208325004>
- De Tezanos-Pinto, P., Bratt, C., & Brown, R. (2010). What will the others think? In-group norms as a mediator of the effects of intergroup contact. *British Journal of Social Psychology*, 49(3), 507–523. <https://doi.org/10.1348/014466609X471020>
- Tropp, L. R., O'Brien, T. C., González Gutierrez, R., Valdenegro, D., Migacheva, K., de Tezanos-Pinto, P., Berger, C., & Cayul, O. (2016). How school norms, peer norms, and discrimination predict inter-ethnic experiences among ethnic minority and majority youth. *Child Development*, 87(5), 1436–1451. <https://doi.org/10.1111/cdev.12608>

- Tropp, L. R., O'Brien, T. C., & Migacheva, K. (2014). How peer norms of inclusion and exclusion predict children's interest in cross-ethnic friendships. *Journal of Social Issues*, 70(1), 151–166. <https://doi.org/10.1111/josi.12052>
- Tropp, L. R., & Pettigrew, T. F. (2005). Relationships between intergroup contact and prejudice among minority and majority status groups. *Psychological Science*, 16(12), 951–957. <https://journals.sagepub.com/doi/10.1111/j.1467-9280.2005.01643.x>
- Turner, R. N., & Cameron, L. (2016). Confidence in contact: A new perspective on promoting cross-group friendship among children and adolescents. *Social Issues and Policy Review*, 10(1), 212–246. <https://doi.org/10.1111/sipr.12023>
- Viki, G. T., Culmer, M. J., Eller, A., & Abrams, D. (2006). Race and willingness to cooperate with the police: The roles of quality of

contact, attitudes towards the behaviour and subjective norms. *British Journal of Social Psychology*, 45(2), 285–302. <https://doi.org/10.1348/014466605X49618>

How to cite this article: McKeown, S., Di Bernardo, G. A., Charlesford, J., Vezzali, L., & Sagherian-Dickey, T. (2024). Peer inclusion and school equality norm associations with intergroup contact, and academic self-efficacy amongst ethnic majority and ethnic minority youth. *Journal of Applied Social Psychology*, 54, 247–257. <https://doi.org/10.1111/jasp.13027>