

ARTICLE

Who you know influences where you go: Intergroup contact attenuates bias in trainee teachers' school preferences

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Email: L.doyle@sussex.ac.uk**Abstract**

The vicious cycle of educational inequality may be maintained and perpetuated by teachers' lack of desire to work in socioeconomically deprived communities. Across two studies ($N_{\text{total}} = 606$), we experimentally investigated whether teachers' aversions to such settings could be mitigated by contact experiences with (a) people experiencing financial hardship and (b) children from disadvantaged backgrounds. Trainee teachers rated their levels of desire to work in schools that varied in terms of the socioeconomic backgrounds and diversity of their student populations. They also reported their contact experiences. Although, overall, teachers showed an aversion to working in a school that served a diverse and low-income community compared to one with average student demographics, this effect was attenuated when teachers had more prior contact with both close others in financial hardship and children from disadvantaged backgrounds. These findings were replicated across both studies. Further analyses also revealed that the relation between contact and school desirability may, at least in part, be mediated by changes in teaching self-efficacy. These findings demonstrate the potential value of teachers' contact with other groups as a method of reducing bias in education.

KEYWORDS

educational inequality, intergroup contact, self-efficacy, socioeconomic status, teacher bias, teacher recruitment

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BACKGROUND

Research has shown that greater equality in education would be in the best interests of everyone (OECD, 2012; Wilkinson & Pickett, 2010), yet inequalities persist in educational settings both in the UK (Hutchinson et al., 2020) and further afield around the world (García & Weiss, 2017; OECD, 2012). For example, students in England who have been eligible for free school meals (FSM; a commonly used proxy for lower socioeconomic status) during the past 6 years trail their non-FSM-eligible counterparts by an average of one and a half years' worth of learning by the end of compulsory education (Hutchinson et al., 2020). Similar disparities in educational outcomes exist in relation to students' ethnic background, gender, and special educational needs status (Department for Education, 2022; Hutchinson et al., 2020). The causes of such inequalities are numerous and complex, but contributing factors include exposure to stereotypes and biases in the education system (Bruneau et al., 2020; Doyle et al., 2023, 2024; Glock & Kleen, 2020, 2023; Steele et al., 2002), anxieties about belonging in the school environment (Walton & Brady, 2020; Walton & Cohen, 2007), and unequal access to resources and opportunities (Easterbrook et al., 2023, 2024; Jæger & Blaabæk, 2020; Stewart et al., 2018).

One resource that is distributed unequally among students is that of high-quality teachers, with schools serving predominantly low-income communities often being staffed by disproportionately large numbers of low-quality or underqualified teachers (Allen et al., 2018; Allen & Sims, 2018; Goldhaber et al., 2011, 2015; Holzberger & Schiepe-Tiska, 2021). One contributing factor to this issue is that, in general, teachers may be averse to working in schools that serve diverse and low-income student populations, potentially due to the genuine difficulties associated with teaching in these settings (Allen & McInerney, 2019) and their biases against students from such backgrounds (Glock et al., 2019), even when they perceive such jobs to be more beneficial to their career prospects (Doyle & Easterbrook, 2023). This suggests that, when given the choice, teachers may choose to avoid working in diverse and low-income communities, thereby leaving lower-quality teachers – who likely have relatively few employment options available – to take up posts in such settings. This is likely to be the case for teachers from both higher and lower socioeconomic backgrounds, as even those from stereotyped backgrounds may themselves be socialised into perceiving students through the lens of negative stereotypes (Bourdieu & Passeron, 1990; Copur-Gencturk et al., 2020).

The importance of this trend for students' unequal access to high-quality education cannot be overstated. Teacher effectiveness is linked to a range of positive outcomes for students, including improved attendance (Gershenson, 2016) and academic attainment (Hanushek et al., 2005). Furthermore, the downstream consequences of having high- or low-quality teachers are startling: In the short term, students who are assigned high (vs. low) quality teachers for one academic year may stand to gain approximately an entire year's worth of extra learning (Hanushek, 1992). In the longer term, a class of 30 children in the U.S. who receive an academic year of instruction from a teacher whose effectiveness lies one standard deviation above the mean (84th percentile) could stand to share an additional \$639,338 in lifetime income compared to a class of 30 children receiving instruction from a teacher with average effectiveness; by contrast, having an ineffective teacher can lead to losses in lifetime income relative to what may be earned by students with teachers who demonstrate average effectiveness (Hanushek, 2011). It is therefore important and timely to explore methods of improving *all* teachers' attitudes towards working in diverse and low-income communities in the hope that even the most effective teachers will also take interest in working in such schools. Indeed, the UK government recently defined this as one of the greatest challenges in their bid to close educational attainment gaps, and subsequently pledged higher retention payments to maths teachers who commit to working in disadvantaged areas for more than 3 years (Department for Education, 2017). Nonetheless, such extrinsic rewards are unlikely to alter teachers' intrinsic or social utility motivations to work with students from such areas. In this paper, we build upon these ideas to investigate whether trainee teachers' contact experiences with people experiencing the precarity of financial hardship could act as a mechanism to reduce bias and increase their desire to work in schools situated in diverse and low-income communities.

Intergroup contact theory and research

A plethora of research over recent decades has revealed that contact experiences with people who identify with different groups or who come from backgrounds that differ from one's own (including, but not limited to, identity groups related to one's ethnic and economic backgrounds) can be an effective way to reduce prejudice and bias (Brown & Hewstone, 2005; Lemmer & Wagner, 2015; Pettigrew & Tropp, 2006). These reductions have been shown to function through pathways such as decreased anxiety in intergroup situations (Page-Gould et al., 2008; Pettigrew & Tropp, 2008), and increased empathy and knowledge about people from other groups (Pettigrew & Tropp, 2008; Vezzali et al., 2017). Moreover, intergroup contact tends to be most effective at reducing bias when cross-group friendships emerge (Davies et al., 2011; Pettigrew, 1998). We hypothesised, therefore, that teachers' biases against working in schools with high proportions of students from low-income backgrounds could be attenuated if they had significant contact and close ties with people – such as friends and family members – who experience financial hardship.

In educational contexts, contact research has largely focused on *students'* social relations and contact experiences (Tropp et al., 2022; Vezzali et al., 2017). Although positive intergroup contact holds the potential to improve teacher-student relationships and reduce teacher bias (see Godsil et al., 2017; Okonofua et al., 2016), there is a dearth of research into the effects of individual-level contact on *teachers'* classroom practices and job preferences. We argue that this gap in the literature represents an important area for study, as it could offer educators and institutions a greater understanding of teachers' anxieties associated with teaching students from different backgrounds, and in doing so help to combat the emergence of teacher bias.

In addition to decreasing anxiety and increasing empathy, another pathway through which contact may enhance desire to work in diverse and low-income schools involves building teachers' feelings of self-efficacy. Teaching self-efficacy is positively associated with teacher-student relationships, teachers' performance and well-being, and students' achievement (Klassen & Tze, 2014; Zee & Koomen, 2016), thereby making it an important psychological construct to consider in relation to school choice. One potentially potent ingredient for teaching self-efficacy may be a teacher's confidence in their ability to form strong relationships with those they teach (Hajovsky et al., 2020), which could prove particularly important when teaching students from diverse ethnic and socioeconomic backgrounds. Indeed, research has shown that intergroup contact predicts increased feelings of confidence about having future contact and maintaining relationships with people from groups different to one's own, which in turn predicts higher-quality cross-group friendships (Bagci et al., 2020; Kauff et al., 2021). This “confidence in contact” (Turner & Cameron, 2016) could also apply to teachers' self-efficacy beliefs about forming good teacher-student relationships and meeting the challenges associated with working in schools in ethnically diverse and/or economically deprived areas. In line with this perspective, we also test whether the effects of contact on school desirability are mediated by increases in teaching self-efficacy.

Current studies

To summarise, the current studies investigate whether teachers' contact experiences shape their desire to work in schools in diverse and economically deprived areas. As teachers may have meaningful contact with close others in their private life, as well as students in the workplace, we test whether teachers' (a) prior contact experiences with friends and family members who experience financial hardship, and (b) contact with youth from disadvantaged backgrounds may moderate the relation between the proportion of students from low-income backgrounds in a given school and trainee teachers' desire to work in that school. In this paper, we report findings based on data from two larger pre-registered projects concerning individual differences in trainee teachers' beliefs as moderators for their school preferences.¹ The pre-registered aspects of the studies are reported else-

¹Study 1 As predicted pre-registration link: https://aspredicted.org/73J_GT6. Study 2 OSF pre-registration link: https://osf.io/vhy2q/?view_only=d113df2f25ce45e4b312ebdaeb22f634.

where (see Doyle & Easterbrook, 2023); but given the timeliness and importance of *reducing* teacher bias in school choices, the present manuscript highlights prior contact experience as a key bias-reducing mechanism that could influence job desirability for teachers and other education professionals. Ethical approval for both studies was granted by the Sciences & Technology Cross-School Research Ethics Committee review board at the host institution.

STUDY 1

In Study 1, we expected that teachers' prior contact experiences would moderate the effect of school demographics on trainee teachers' job desirability. Specifically, we hypothesised that greater levels of contact would both be associated with greater desire to work in a school serving students from diverse and low-income backgrounds. We also ran mediation analyses to test whether the effects of prior contact influence school desirability via changes in teaching self-efficacy.

Sample

We recruited 349 UK-based trainee primary and secondary teachers via posts in teaching groups on the social media platform Facebook in Summer 2021. All participants were either (a) enrolled on a teacher training course or (b) had completed one in the previous year but not yet started their first teaching post. In accordance with our pre-registered analysis plan, 147 participants who spent less than 45 s on any of the key tasks were excluded from the analyses. The final sample therefore comprised 202 pre-service teachers.² Sample demographics are reported in full in Table 1. Eighty-nine percent of the final sample identified as female and 89% as White. Twenty-two percent of respondents had been eligible for free school meals (FSM) during their childhood and 20% reported having had either a disadvantaged or very disadvantaged upbringing (vs. 29% who reported having come from an affluent or very affluent background).

Procedure and design

All participants consented to take part in a study about the career choices of trainee teachers and were shown job advertisements for three schools as part of a repeated measures research design. Only two of the advertisements represented target schools and were positioned first and last in the sequence, with the order counterbalanced to counteract potential order effects. The second school in the sequence was included as a distractor task to conceal the focus of the experimental manipulation. Following each job advertisement, participants were asked about their desire to work in that school, and they were asked to report feelings of self-efficacy in regard to meeting the challenges presented by each school. Following these main outcome measures, participants reported their close contact with people experiencing financial hardship and their experience of working with children from disadvantaged backgrounds. Finally, participants were fully debriefed.

Materials and measures

The schools in the three job descriptions (available in the [Supporting Information](#)) were all described as being a short commute from participants' homes and as offering the same salary. Each

²Post-hoc power analyses revealed that we had .94 power to detect a medium main effect size of $f = .25$.

TABLE 1 Sample demographics for Studies 1 and 2.

Characteristic	Study 1, N=202	Study 2, N=404
Gender		
Female	88.6%	85.1%
Male	6.9%	10.4%
Non-binary	0.5%	0%
Transgender	0%	0.2%
Other	0.5%	0.3%
Undisclosed	3.5%	4%
Ethnicity		
Asian or Mixed Asian and White	5.5%	5.6%
Black or Mixed Black and White	0.5%	3.7%
White	88.6%	83.7%
Other	2%	3.2%
Undisclosed	4.5%	3.7%
Eligibility for free school meals as a child		
Yes	21.8%	23%
No	69.3%	66.8%
Undisclosed	8.9%	10.1%
Background as a child		
Very disadvantaged	3.1%	2.7%
Disadvantaged	16.8%	16.3%
Average	48%	44.3%
Affluent	26.2%	30.2%
Very affluent	3%	3.7%
Undisclosed	3%	2.7%
Age range taught		
Early years	4%	5.7%
Primary	52.5%	57.4%
Secondary	40.6%	34.2%
Undisclosed	3%	2.7%

advertisement followed a standard format including information about Ofsted³ ratings, attainment, and pupil demographics, in addition to a short job description. The target schools – one with a high proportion of students eligible for FSM, and one with average levels of FSM eligibility – were identical in their Ofsted ratings, attainment and pupil demographics, with the exception of the percentage of FSM-eligible pupils at any time in the last 6 years (55.9% vs. 27.5% respectively). The national average of FSM-eligible pupils in English schools was 27.7% and this figure was reported in a separate column on each advert for comparison. They also included descriptions that had been largely mirrored but for mentions of diversity (e.g., High-FSM school: “We are proud to serve a very diverse inner-city community” vs. Average-FSM school: “We are proud to be an integral part of the local community”). To distract participants from the similarities, we included a non-target school which was positioned between the two target schools in all trials. The non-target school varied from the high- and average-FSM schools in all respects (e.g., higher ratings, different demographics, and a

³The Office for Standards in Education, Children's Services and Skills (Ofsted) is a government inspectorate body that rates schools in England on their educational provision.

non-mirrored job description). The time participants spent on each job description was measured on Qualtrics to ensure that participants took the time to read the information carefully ($M_{\text{Average-FSM}} = 99.48$, $SD_{\text{Average-FSM}} = 61.09$; $M_{\text{High-FSM}} = 94.10$ s, $SD_{\text{High-FSM}} = 46.89$).

School desirability

To enable a direct test of the experimental manipulation, participating trainee teachers were presented with three new items about their desire to work in each school: “How happy would you be to work in this school?”, “How likely would you be to apply for a job in this school?” and “To what extent would you like to work in this school?” (1 = Not at all, 7 = Very). The three items demonstrated excellent reliability and were combined for an average score of school desirability of each school ($\omega_s = .95$).

Teaching self-efficacy

In relation to each school, participants were asked about their feelings of teaching self-efficacy in four items adapted from existing research (Easterbrook et al., 2023; Klassen et al., 2009): “To what extent do you think you have the skills/knowledge/confidence to overcome the challenges that come with working in a school like this?” and “To what extent do you feel you could make a difference at this school?” (1 = Not at all, 7 = Very much; $\omega_s = .86$).

Prior contact with people experiencing financial hardship

Participants stated how much they agreed with four statements about their level of contact with people – specifically friends and family – who experience financial hardship, such as “I know people who cannot always afford basic provisions (food, heating, etc.)”, “I know people who struggle to access key services (education, healthcare, transportation, etc.)”, “I know people whose home is not fit to accommodate them/their family (too small, unsafe, etc.)”, and “I know people who struggle to survive on the money they earn” (1 = Strongly disagree, 7 = Strongly agree). This new scale demonstrated excellent reliability ($\omega = .93$).

Prior contact with children from disadvantaged backgrounds

Participants responded to a single item assessing the amount of prior experience they had working with disadvantaged children, with responses scored on a 5-point scale (1 = None at all, 5 = A great deal).

Demographics

Participants provided information regarding their socioeconomic status via three items: “Did at least one of your parents complete a Bachelor's degree (or higher) at university?” (Yes/No), “When you were a school student yourself, how would you describe your home life?” (1 = Very disadvantaged, 5 = Very affluent), and “When you were at school, were you at any time eligible for free school meals?” (Yes/No). They also provided information about their gender, ethnic background, and the age range that they teach (Early years, Primary, or Secondary). As one's own demographic background is likely to influence one's desire to work with students from diverse and low-income backgrounds, we included these measures of teacher SES, ethnicity, gender, and the age range they teach as control variables.

Results

To provide context for the present investigation, we briefly outline main effects of the target job descriptions, which are reported in greater detail elsewhere (Doyle & Easterbrook, 2023). Overall, participants showed a preference for working in a school with average ($M = 5.41$, $SD = 1.16$) compared to high ($M = 5.02$, $SD = 1.34$) proportions of FSM-eligible students, $F(1, 201) = 17.22$, $p < .001$, $d = .31$. They also reported higher levels of teaching self-efficacy in relation to working at the average-FSM school ($M = 5.15$, $SD = .97$) as compared to at the high-FSM school ($M = 4.88$, $SD = 1.11$), $F(1, 201) = 15.31$, $p < .001$, $d = .26$. Assumptions tests for the model revealed no studentized residuals with a Bonferroni $p < .05$, indicating that there were no influential outliers in the data. Moreover, in line with Field (2013), the study's large sample suggested that assumption of normality would be met. Finally, Greenhouse–Geisser corrections were automatically applied to the results, thereby eradicating any potential violations of sphericity.

On average, participants' contact with people experiencing financial hardship fell just above the midpoint of the scale ($M = 4.35$) yet their experience of working with children from disadvantaged backgrounds was slightly below the midpoint ($M = 2.97$). To test our contact moderation hypotheses, we specified two multilevel models. The first model had condition (Average- vs. High-FSM school) nested within individuals predicting teachers' desire to work in each school, and teachers' reported contact with people who experience financial hardship as a potential moderator. As such, the model included a level-1 main effect of condition, a level-2 main effect of contact, and a cross-level interaction between these two variables. The second model was identical to the first but used experience working with students from disadvantaged backgrounds as the contact variable in place of contact with people in financial hardship. In doing so, we aimed to replicate our findings with two separate contact measures. As noted previously, demographic variables (teachers' parental education, family affluence in childhood, free school meal eligibility in childhood, ethnicity, gender, and the age range they teach) were included in the models as statistical controls. For both models, ANOVA tests with Type III sums of squares were used to detect interaction effects.

Prior contact as a moderator for school desirability

The first model yielded a significant interaction between condition and prior contact with people experiencing financial hardship, $\chi^2(1) = 5.98$, $p = .014$ ($f^2 = .03$). Contact with people who experienced financial precarity was associated with greater desire to work in the high-FSM school, $b = .21$, $p < .001$, but made no difference to trainee teachers' desire to work in the average-FSM school, $b = .06$, $p = .252$ (see Figure 1a). Similarly, the second model yielded a significant interaction between condition and prior experience working with children from disadvantaged backgrounds, $\chi^2(1) = 6.24$, $p = .012$ ($f^2 = .03$). Contact with disadvantaged children predicted a greater desire to work in the high-FSM school, $b = .27$, $p = .003$, but made no difference to desirability of working in the average-FSM school, $b = .02$, $p = .834$ (see Figure 1b; see also Table S1 for full regression output and Figure S1 for how incremental changes in contact affect school desirability). We also ran comparable analyses including only teachers who had not been eligible for free school meals themselves when attending school in their youth. The results were substantively the same as those reported above for interactions between condition and each form of contact ($ps < .05$).

Teaching self-efficacy as a potential mediator

We carried out exploratory analyses to test whether feelings of teaching self-efficacy can account for the relationship between prior contact with close friends and family experiencing financial hardship and school desirability, by specifying two separate mediation models. The first of these tested whether

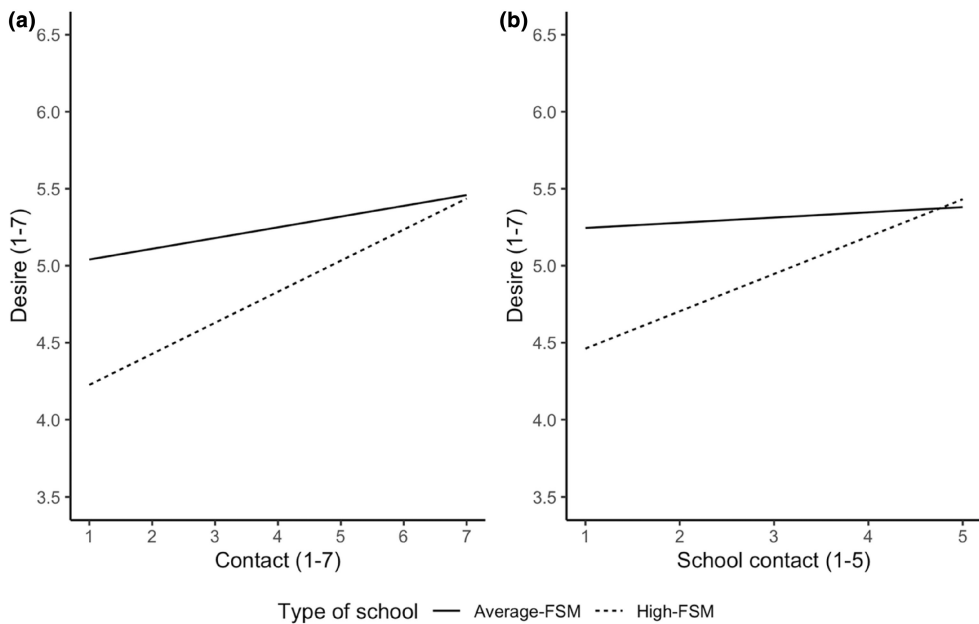


FIGURE 1 Desire to work in a school with average versus high proportions of FSM-eligible students at different levels of: (a) Prior contact with people experiencing financial hardship. (b) Prior experience working with children from disadvantaged backgrounds.

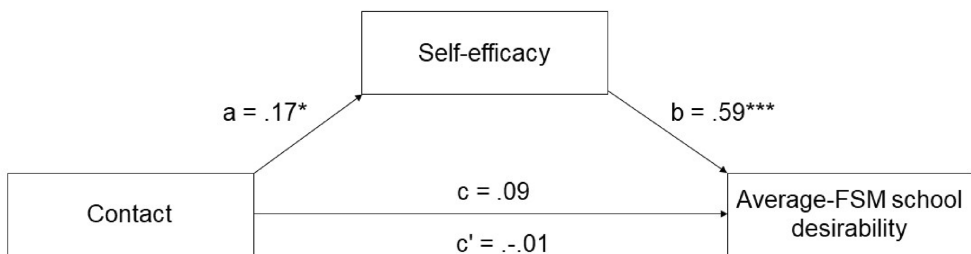


FIGURE 2 Mediation diagram for the effect of contact on desire to work in the average-FSM school via teaching self-efficacy. *Note:* 1. Trainee teachers' socioeconomic status, ethnicity, gender and age group taught are controlled for in pathways from contact to self-efficacy and school desirability. 2. All reported estimates are standardised betas. 3. $^*p < .05$, $^{***}p < .001$.

teaching self-efficacy mediated the relationship between contact and desire to work in the average-FSM school, after controlling for teacher demographics. Figure 2 shows a significant indirect effect of contact on desire to work in the average-FSM school via teaching self-efficacy, $b = .07$, $\beta = .10$, $SE = .03$, $\chi = 2.13$, $p = .033$, but no direct effect, $b = -.01$, $\beta = -.01$, $SE = .04$, $\chi = -1.6$, $p = .875$. The second model predicted desire to work in the high-FSM school from contact and the indirect effect via teaching self-efficacy, after controlling for teacher demographics. As with the average-FSM school, there was a significant indirect effect of contact on desire to teach in the high-FSM school via teaching self-efficacy, $b = .11$, $\beta = .14$, $SE = .04$, $\chi = 2.84$, $p = .005$. However, unlike the average school, there was also a significant direct effect, $b = .11$, $\beta = .14$, $SE = .04$, $\chi = 2.42$, $p = .016$ (see Figure 3). Although these analyses are correlational in nature and do not explicitly relate to biases, they do suggest that while the effect of contact on school desirability is in part due to greater feelings of teaching self-efficacy, for schools in diverse low-income areas, there is also a significant independent effect of contact.

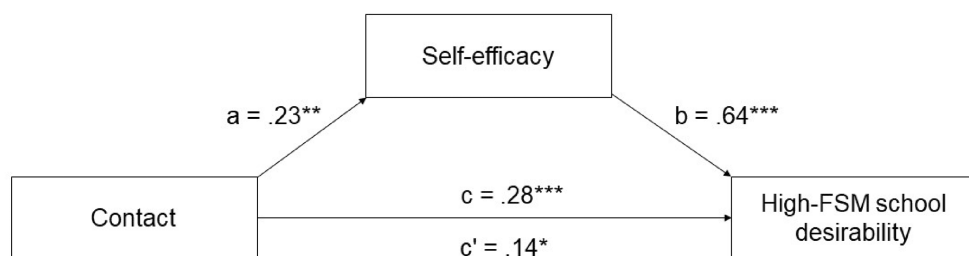


FIGURE 3 Mediation diagram for the effect of contact on desire to work in the high-FSM school via teaching self-efficacy. *Note:* 1. Trainee teachers' socioeconomic status, ethnicity, gender and age group taught are controlled for in pathways from contact to self-efficacy and school desirability. 2. All reported estimates are standardised betas. 3. * $p < .05$, ** $p < .01$, *** $p < .001$.

STUDY 2

Our aims for Study 2 were to replicate and confirm the findings of the first study. The contact measures were again part of a larger project that included a between-subjects intervention with two levels, therefore doubling our sample size. Findings relating to the intervention are reported elsewhere (Doyle & Easterbrook, 2023) and we focus this paper exclusively on findings pertaining to the key role of prior contact experience. Once again, we predicted that contact would moderate the effects of school demographics on school desirability, thereby replicating Study 1. We also expected to replicate the mediation analyses from Study 1, suggesting that the effects of contact on teachers' desire to work in each school would be partially mediated by increases in teaching self-efficacy.

Sample

In Autumn 2022, a total of 443 UK-based trainee teachers who were either (a) enrolled on a teacher training course, or (b) had completed one in the previous year but not yet started their first teaching post were recruited via Facebook posts in teacher forums and emails to ITE course leaders (who shared the survey with their cohorts) to take part in a study about the career choices of trainee teachers. Pre-registered exclusion criteria resulted in 39 respondents being excluded for spending less than 30 s reading and answering questions about the two target schools, leaving a final sample of $N = 404$.⁴ Of these, 85.1% identified as female and 83.7% as White (5.3% Asian or mixed Asian and White; 3.8% Black or mixed Black and White). Additionally, 25.6% reported that they had been eligible for free school meals as a schoolchild, 36.9% had at least one parent who had completed a bachelor's degree at university, and 19% reported that they came from either disadvantaged or very disadvantaged backgrounds (see Table 1 for full sample characteristics).

Procedure and design

The contact and main outcome measures were included as part of a larger study which employed a mixed-methods design (see Doyle & Easterbrook, 2023). The design relating to the variables of interest for this study was almost identical to that of Study 1. To account for the potential influence of the between-subjects factor, we included the interaction of the between-subjects factor with the within-subjects factor (i.e., school demographics) as a predictor in all models.

⁴Post-hoc power analyses revealed that we had .99 power to detect a medium main effect size of $f = .25$.

Materials and measures

The job advertisements for the two target schools (presented first and third, in counterbalanced order) and distractor school (presented second) were identical to those used in Study 1. To disentangle the effects of diversity and SES, we also included a fourth job advertisement for a school with high levels of FSM but no mention of diversity in the job description. However, Holm-adjusted contrasts revealed that there was no difference in desirability between the two high-FSM schools, $t(396) = .81, p = .418$. The exploratory fourth school was therefore not included in any further analyses. All job advertisements can be found in full in the [Supporting Information](#).

Items measuring school desirability ($\omega_s > .94$), teaching self-efficacy ($\omega_s > .83$), prior contact with those experiencing financial hardship ($\omega = .88$), the amount of prior experience trainees had working with disadvantaged children, and questions relating to participants' ethnic background, socioeconomic status, and the age range they teach, were all the same as those used in Study 1.

Results

The correlation matrix in [Table 2](#) shows that contact (of both kinds) was significantly and positively associated with greater desire to work in the high-FSM schools, but not in the average-FSM school. Moreover, in general, contact with children from disadvantaged backgrounds was slightly more strongly associated with self-efficacy beliefs than was contact with close others who were experiencing financial hardship.

Once again, we briefly report the main effects to provide context for the present investigation.⁵ To test for main effects of condition (high-FSM vs. average-FSM), we ran a series of one-way ANOVAs using the *afex* package in R (Singmann et al., 2015), with condition as a repeated measure nested within individuals. Assumptions tests revealed no outliers, the large sample size mitigated any issues with normality (Field, 2013), and the model automatically corrected for issues of sphericity. As with Study 1, there was a main effect of condition, whereby participants reported significantly less desire to work in the high-FSM school ($M = 5.12, SD = 1.27$) than the average-FSM school, $M = 5.35, SD = 1.19, F(1, 403) = 12.62, p < .001, d = .19$. Furthermore, participants reported lower feelings of teaching self-efficacy in relation to the high-FSM ($M = 4.96, SD = 1.09$) than the average-FSM school ($M = 5.22, SD = .94, F(1, 403) = 23.60, p < .001, d = .26$). Our exploratory analyses revealed that there were no substantial differences in desire between the high-FSM school that refers to diversity and the additional high-FSM school without explicit references to diversity (see [Table S2](#) for comparisons).

On average, participants' self-reported contact with people experiencing financial hardship ($M = 4.93$) and experience of working with children from disadvantaged backgrounds ($M = 3.05$) fell above the midpoints of their respective scales. To test the contact moderation hypotheses, we again specified two multilevel models – with within-subjects condition nested within individuals – predicting desirability of working in each school. The level-1 predictor was within-subjects condition (school demographics: 0 = average-FSM school, 1 = high-FSM school). The level-2 predictors were between-subjects condition (intervention: 0 = control, 1 = treatment) and either the measure of prior contact with others experiencing financial hardship (Model 1), or prior experience of working with children from disadvantaged backgrounds (Model 2). Each model also included cross-level interactions between (i) the within- and between-subjects conditions,⁶ and (ii) the within-subjects condition and teachers' prior contact. Finally, as with Study 1, ANOVA tests with Type III sums of squares were used to detect interaction effects, and

⁵The main effects have been reported in greater detail elsewhere (Doyle & Easterbrook, 2023).

⁶We also ran the models without controlling for the between-subjects intervention and related interactions. However, these analyses revealed almost identical results with no meaningful differences, so we only report the original model here.

TABLE 2 Correlation matrix for key variables in both Study 1 (top/right half) and 2 (bottom/left half).

	1	2	3	4	5	6	7	8
1. Des: High	1	.672***	.443***	.371***	—	—	.314***	.241**
2. SEff: High	.632***	1	.299***	.561***	—	—	.241**	.367***
3. Des: Average	.428***	.257***	1	.591***	—	—	.149*	.078
4. SEff: Average	.343***	.443***	.607***	1	—	—	.197**	.324***
5. Des: High-No Div	.626***	.370***	.481***	.357***	1	—	—	—
6. SEff: High-No Div	.422***	.603***	.357***	.600***	.587***	1	—	—
7. Contact: Close	.234***	.246***	.084	.094	.233***	.228***	1	.363***
8. Contact: Children	.176***	.309***	.084	.195***	.146**	.223***	.235***	1

Note. Key: 1. Des: High = Desire to work in high-FSM school; 2. SEff: High = Self-efficacy for high-FSM school; 3. Des: Average = Desire to work in the average-FSM school; 4. SEff: Average = Self-efficacy for average-FSM school; 5. Des: High-No Div = Desire to work in high-FSM school without references to diversity; 6. SEff: High-No Div = Self-efficacy for high-FSM school without references to diversity; 7. Contact: Close = Contact with close others (friends/family) experiencing financial hardship; 8. Contact: Children = Contact experience working with children from disadvantaged backgrounds. The top half of the matrix reports correlations from Study 1 (which did not include the high-FSM school without references to diversity), the bottom half of the matrix reports correlations from Study 2. * $p < .05$, ** $p < .01$, *** $p < .001$.

trainee teachers' SES, ethnicity, gender, and the age range they teach were entered as statistical controls.

Prior contact as a moderator for school desirability

Model 1 revealed a significant cross-level interaction between contact with people in financial hardship and school demographics, $\chi^2(2) = 16.33, p < .001, f^2 = .05$. Figure 4a shows that the more contact trainees had with people experiencing financial hardship, the more likely they were to desire to work in a school serving high proportions of FSM-eligible students, $b = .18, p < .001$. By contrast, prior contact made no difference in predicting teachers' desire to work in the average-FSM school, $b = .03, p = .475$. In Model 2, an almost identical pattern was found using teachers' prior experience working with children from disadvantaged backgrounds as the contact moderator, $\chi^2(2) = 13.54, p = .001, f^2 = .04$. Specifically, having greater prior experience working with disadvantaged children predicted greater desire to work at the high-FSM school, $b = .23, p < .001$, but not the average-FSM school, $b = .08, p = .159$ (see Figure 4b; see also Table S1 for full regression output and Figure S2 for how incremental changes in contact affect desire). As with Study 1, we also ran the models including only teachers who had not been eligible for free school meals themselves as schoolchildren. The results were again substantively the same for interactions between condition and each form of contact (p s < .01).

Teaching self-efficacy as a potential mediator

We specified the same mediation models as in Study 1. For desire to work in the average-FSM school, there was neither a significant direct effect of contact with those experiencing financial hardship, $b = -.01, \beta = -.01, SE = .04, \alpha = -.30, p = .761$, nor a significant indirect effect of contact via self-efficacy, $b = .04, \beta = .05, SE = .03, \alpha = 1.42, p = .156$. By contrast, whilst there was no significant direct effect of

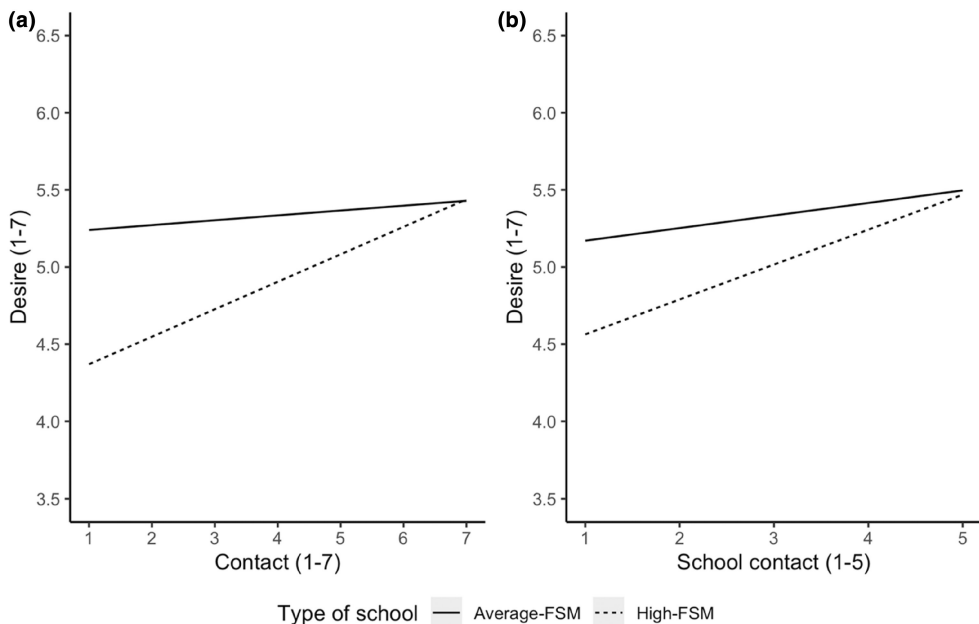


FIGURE 4 Desire to work in a school with average versus high proportions of FSM-eligible students at different levels of: (a) Prior contact with people experiencing financial hardship. (b) Prior experience working with children from disadvantaged backgrounds.

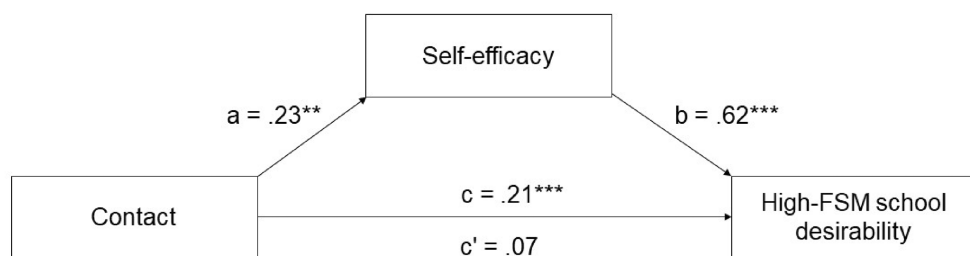


FIGURE 5 Mediation diagram for the effect of contact on desire to work in the high-FSM school via teaching self-efficacy. *Note:* 1. Trainee teachers' socioeconomic status, ethnicity, gender and age group taught are controlled for in pathways from contact to self-efficacy and school desirability. 2. All reported estimates are standardised betas. 3. ** $p < .01$, *** $p < .001$.

contact on desire to work in the high-FSM school, $b = .06$, $\beta = .07$, $SE = .04$, $z = 1.53$, $p = .13$, there was a significant indirect effect of contact via self-efficacy, $b = .12$, $\beta = .14$, $SE = .03$, $z = 4.00$, $p < .001$ (see Figure 5). This shows that, in slight contrast to Study 1, for the high-FSM school, teaching self-efficacy largely accounted for the relationship between contact and school desirability.

GENERAL DISCUSSION

Young learners from certain backgrounds face a number of barriers to educational success during their school years, including a disproportionate lack of access to high quality teachers (Allen et al., 2018; Allen & Sims, 2018; Goldhaber et al., 2011, 2015; Holzberger & Schiepe-Tiska, 2021), possibly because teachers have a preference for working in schools with average (vs. diverse and low-income) student demographics (Doyle & Easterbrook, 2023). An important mission for providers of teacher training is to reduce this bias by encouraging all teachers – including those of the highest quality – to feel prepared and, importantly, motivated to teach in communities that serve high proportions of children from diverse and low-income backgrounds. Across two studies, we showed that bias in school preferences may be attenuated when trainee teachers have greater levels of prior contact with people experiencing financial hardship and/or disadvantaged youth.

Indeed, in both studies, correlational simple effects analyses revealed that although contact made little difference to trainee teachers' desire to work in a school with average student demographics, when the school in question was shown to serve students in a diverse, low-income community, higher levels of prior contact strongly predicted a greater desire to fill the vacant post. The troubling inverse of this, however, is that low levels of prior contact were associated with an aversion towards working in more diverse school in a low-income community, and a large disparity in teachers' school preferences based on student populations. These results held after controlling for trainee teachers' gender, socioeconomic, and ethnic backgrounds, as well as the age range they planned to teach. Thus, independent of trainees' own background characteristics, such as being from a lower socioeconomic or ethnic minority background, teachers' prior contact experiences better accounted for the reported effects.

Our mediation analyses revealed that, in both studies, contact was associated with greater feelings of teaching self-efficacy, which in turn predicted greater desire to work in the high-FSM school. These findings seem to support recent research suggesting that intergroup contact is associated with greater feelings of confidence about future cross-group interactions (Bagci et al., 2020; Kauff et al., 2021; Turner & Cameron, 2016). As such, teachers who have higher levels of contact may therefore feel greater feelings of self-efficacy about their ability to successfully interact with students, parents and other members of diverse, low-income communities, and to successfully meet the perceived challenges that come with teaching students from historically marginalised groups. Nevertheless, although this significant indirect pathway rendered the direct effect non-significant in Study 2, it did not in Study 1, thereby

suggesting that other factors beyond simple increases in self-efficacy are also required to explain how contact increases the desirability of diverse, low-income schools.

Past research has suggested a multitude of possible pathways through which contact reduces prejudice and discrimination, including increases in empathy and perspective-taking, the generation of affective ties, and reductions in anxiety when engaging with members of other groups (Pettigrew, 1998; Pettigrew & Tropp, 2008). Although we did not measure anxiety in the current studies, it is possible that early career teachers may feel ill-equipped to navigate teaching in diverse and socioeconomically deprived contexts, perhaps in part due to their own biases, or perhaps because their limited experience of contact with individuals from lower socioeconomic backgrounds feeds feelings of anxiety (Tropp & Rucinski, 2022). Conversely, it is also possible that reductions in anxiety would in turn lead to greater feelings of self-efficacy (Aydin et al., 2011). Future research should aim to deepen our knowledge of the mechanisms at play by measuring more potential mediators of the relationship between teachers' prior contact and school desirability.

Intergroup contact has regularly been shown to be an effective method of reducing prejudice among students (Tropp et al., 2022; Turner & Cameron, 2016; Vezzali et al., 2017), but our novel research also shows its potential application as a method of attenuating bias in trainee teachers' school choices. If opportunities for positive cross-group contact became commonplace in initial teacher education programs, it is possible that early career teachers at all levels of teaching effectiveness would become more attuned to the experiences and circumstances of students living in diverse and low-income communities, and importantly, more motivated to teach them.

Caveats and limitations

Our findings come with a number of caveats. First, despite the experimental nature of the studies and our ability to draw causal conclusions about the main effects, our findings relating to contact are correlational in nature. Therefore, although the contact effects are clear and robust, it is not possible to prove that contact causes reduced bias in school choices *per se*. Second, our main contact measures only focused on close contact with friends and family. It is possible that intergroup contact with weaker ties or contact arising from planned interventions would yield different results and should be explored in the future as potential methods of overcoming teacher bias during teacher training. Third, certain conditions for contact may be more conducive to reducing prejudice. We suspect that many of the conditions proposed for optimal contact (see Allport, 1954; Pettigrew, 1998) were met in relation to the contact with close friends and family reported by our sample of trainee teachers, as interactions with close friends tend to be highly cooperative and equal status in nature. It would, however, be interesting for future research to investigate if and how prior contact that does not meet these conditions moderates teachers' school preferences. Finally, although positive intergroup contact tends to be more frequent (Schäfer et al., 2021), negative contact experiences may have a stronger – and potentially harmful – influence on prejudice and bias (Barlow et al., 2012; Hayward et al., 2017). Therefore, it is important to consider the kinds of contact that may be most beneficial for reducing teacher bias in school preferences. Additionally, beyond contact, a number of other factors such as teachers' beliefs about the root causes of educational inequality, the malleability of intelligence, and the meritocratic nature of schooling may also play major roles in moderating the relation between the demographics of a school's student population and teachers' perceptions of school desirability (Doyle & Easterbrook, 2023).

We also wish to acknowledge that the present studies have several limitations. First, our findings relied on self-report measures from participants. One potential issue with self-report methods in studies of contact and teacher bias is that more liberal-leaning participants may also wish to portray themselves as being friends with those who experience financial hardship. In addition, we acknowledge that self-reported desire to apply for a job in a school is not always the same as actually applying for that post. Second, we recruited participants for both studies via similar methods. Although these recruitment phases occurred around 15 months apart, there is a small chance of overlap between

the samples. Although we did not explicitly ask participants to identify their ideas about the aims of the studies, we argue that even if participants had correctly guessed their true nature, the results would have been similar, if not even stronger, as participants would likely have attempted to hide their biases. Third, our findings reveal a pattern by which teachers generally tend to avoid schools in diverse and economically deprived areas, and where contact attenuates this aversion. Our proposed logic is that if all teachers have greater desire to work in diverse and low-income communities, then more high-quality teachers will wish to take up post in such settings, subsequently creating a greater equality of access to good teaching. However, it is also possible that teachers may have other prior experiences or motivations that drive their desire to work in schools that serve diverse and economically disadvantaged populations. We encourage future qualitative and quantitative research in this area to elucidate teachers' motivations for pursuing and avoiding placements in diverse and low-income communities, towards the ultimate goal of minimising their biases in school preferences. Finally, the studies reported here grew from two larger pre-registered projects and were exploratory in nature. Exploratory analyses can be greatly advantageous and often support research teams to credibly reach the best explanations for their data (Jebb et al., 2017; Rubin & Donkin, 2022), yet such analyses also require confirmatory work to draw more robust conclusions (Jebb et al., 2017). Nonetheless, although the specific hypotheses relating to contact were not pre-registered, we replicated virtually all findings across two separate studies, thereby offering confirmatory evidence in support of our initial exploratory findings. We recommend that future research replicate and extend these findings using pre-registration prior to data collection.

CONCLUSION

Greater equity in education can be achieved when students have more equal access to excellent teachers. Our studies indicate that prior contact with others facing economic precarity has the potential to temper trainee teachers' aversions to working in diverse, low-income schools, thereby enhancing the possibility that high-quality teachers may be attracted to teaching in diverse, economically disadvantaged schools, to the extent that they have had prior contact experience. We recommend that initial teacher education programs include opportunities for teachers in training to engage in contact with diverse members of the communities they may eventually serve, to minimise prospects of bias in their future school preferences.

AUTHOR CONTRIBUTIONS

Lewis Doyle: Conceptualization; investigation; writing – original draft; methodology; visualization; writing – review and editing; resources; project administration; formal analysis. **Matthew J. Easterbrook:** Conceptualization; writing – review and editing; methodology; supervision; data curation. **Linda R. Tropp:** Writing – review and editing.

CONFLICT OF INTEREST STATEMENT

The second author is an associate editor at the British Journal of Social Psychology. The other two authors have no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

How to cite this article: Doyle, L., Easterbrook, M. J., & Tropp, L. R. (2024). Who you know influences where you go: Intergroup contact attenuates bias in trainee teachers' school preferences. *British Journal of Social Psychology, 63*, 1497–1514. <https://doi.org/10.1111/bjso.12738>