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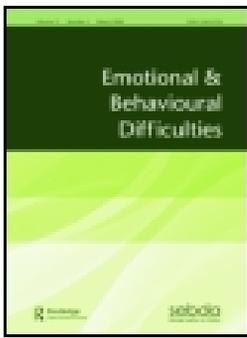
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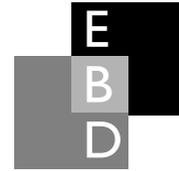


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Differential classroom interactions by ethnicity

A quantitative approach

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ABSTRACT Concerns regarding differentials in classroom experience and academic attainment by ethnicity have been expressed for some time. This study explores, from a quantitative viewpoint based on fieldwork in 10 London schools, one particular aspect of this, namely classroom interactions between teachers and pupils from different ethnic origins. It was found that African Caribbean children were interacting with teachers at a greater rate than other children, mostly for disciplinary and administrative purposes, and to a much lesser extent for teaching purposes. Asian children, conversely, were interacting less with the teacher overall, but relatively highly for teaching purposes. Whilst these patterns were broadly consistent across schools, rates of interaction varied considerably from school to school. In respect of differential classroom interactions, better equality of opportunities is more likely to be achieved as a result of whole school processes than if it is targeted directly.

KEYWORDS

African
Caribbean
children;
Asian children;
classroom
interaction;
ethnicity

Introduction

Different children can experience the same classroom in very different ways. One child may have a long track record of success, and be either genuinely interested or aware that there is an opportunity to shine. Another may have had the opposite experience, and become highly adept at avoidance strategies. Yet another may be dealing with major family difficulties, leading to considerable anxiety, loss of sleep and little time to do homework properly. Another may come from a family with little money, and be made acutely aware that their clothing labels do not conform to peer expectations. Quiet comments during lessons, and rather louder ones during break times, are keenly felt and absorb a considerable amount of time and emotional energy. Also, for whatever reason, a child may repeatedly have received the message, explicitly or implicitly, from peers, family, wider community, the media and so on, that there is no real prospect of success at school, and so there is no real point in trying.

One can go further: it may well be that there are prevailing patterns of the processes described above by socially defined groups, particularly ethnicity. Weak evidence in support of this is given by the different rates of attainment at GCSE and other examinations (e.g. DfEE, 1999), although the connection between attainment and classroom experience is problematic (see, for example, Foster et al., 1996). In the realm of ethnicity, some evidence of differential classroom experience is given in the Social Exclusion Unit (1998) report, particularly that African Caribbean children were excluded from school at six times the overall rate. More recently, Diane Abbott MP has responded to reports of poor behaviour and attainment levels of African Caribbean children, particularly boys, by calling for more male black primary teachers, and suggesting that teachers hold attitudes 'unhelpful' to African Caribbean children (Merrick, 2002; TES, 2002).

This gives rise to three key questions:

- To what extent is it the case that there are differential patterns of classroom experience by ethnicity?
- Assuming that there are such patterns, what are the reasons for this?
- And with the same assumption, what can, indeed should, be done about it?

This article aims principally to address the first question, drawing on data from a research project undertaken in London. This is contextualized by a brief review of some of the key texts in this area, concluding that many of them are now somewhat old, and largely undertaken from a qualitative standpoint. The article concludes with a discussion of the results, and some pointers as to recommendations which can arise from them.

Review of previous studies

Given that the arrival of the *Empire Windrush*, which represents the beginning of large-scale non-white migration to the United Kingdom, was in 1948, and that it was some time after that before women and children came along with the men, it was surprisingly early that attainment levels of children from minority ethnic backgrounds, particularly African Caribbean children, were highlighted as a cause for concern (e.g. Lee, 1965). Initially it was assumed that children coming to live in the UK could be assimilated into white society (DES, 1985) with, subsequently, multicultural and anti-racist approaches used. Early responses to large concentrations of children from minority ethnic backgrounds in certain areas included bussing (as described in Kirp, 1979), which was subsequently discontinued as racist due to the fact that it was only ever children from minority ethnic backgrounds who were required to travel. Bernard Coard (1971), in his much

quoted polemic, considered that racism and middle-class assumptions to a large extent accounted for the over-representation of children from minority ethnic backgrounds, particularly African Caribbean boys, in special schools.

Studies looking more specifically at differential behavioural patterns started to appear in the late 1980s and early 1990s. Gillborn (1990) undertook an ethnographic study which purported to show, amongst other things, that teachers' expectations and ways of dealing with, particularly, African Caribbean boys were noticeably different to others, with similar offences being dealt with more harshly when compared with white boys. Whilst accepting that teachers were not overtly racist, he did contend:

the teachers' ethnocentric perceptions led to actions which were racist in their consequences: as a group, Afro-Caribbean pupils experienced more conflictual relationships with teachers; they were disproportionately subject to the school's reporting and detention systems; they were denied any legitimate voice of complaint. (1990, p. 44)

At very much the same time Peter Foster (1990) also undertook an ethnographic study, the results of which downplayed the element of racism, and considered the 'vicious spiral' aspect of low expectations and attainment amongst African Caribbean boys, in which the boys themselves and their families and wider community play a part. Pryce (1986, p. 120) made this latter point even more strongly, referring to the African Caribbean child's 'mutilating colonial heritage', resulting in the child being 'severely handicapped' in terms of access to education.

Gillborn's analysis is consistent, however, with findings from Wright (1992), working in a primary school setting. In her observations African Caribbean boys were reprimanded for minor reasons for which white boys were not, and 'It was observed that whenever Afro-Caribbean children were present they were always amongst the most criticised and reprimanded children in the group' (1992, p. 19).

Both Gillborn (1990) and Mac an Ghaill (1988) considered African Caribbean girls, coming to the same broad conclusion that, as a rule, they accepted the ends of education whilst rejecting the means. Which is to say that they worked hard but, from the perspective of the teacher, they misbehaved at the same time. Similarly Mirza (1992), working amongst African Caribbean girls aged 14–19, reported that they were largely oblivious to low teacher expectations, the implication being that other children were not.

Gillborn (1990), Mac an Ghaill (1988) and Troyna (1991b) also considered Asian children. Troyna argued on the basis of a research project undertaken on behalf of the Commission for Racial Equality that, whilst by

some analyses Asian children were doing better than the white majority in 'Jayleigh School', in which the overall results were well below national averages, they were nevertheless put into lower sets which kept their performances down. Gillborn did a detailed case study analysis on two Asian boys, in which teachers were more kindly disposed towards them than African Caribbean children. In addition, he recounted an incident whereby a deputy headteacher said with great confidence that no Asian children had been on detention in the recent past, when an examination of school records revealed this to be manifestly untrue. Similarly, in Mac an Ghaill's observations, 'misbehaviour' on the part of African Caribbean children was taken to be a reflection on all such children, whereas 'misbehaviour' on the part of Asian children was taken to be an individual act with no such reflection.

It is of significance that virtually all the work reported above was conducted in a qualitative paradigm. Smith and Tomlinson (1989), in their study of 20 multi-ethnic secondary schools, were more concerned with attainment than behaviour, but did comment that, in a survey undertaken for the study, 'just 1% of parents mentioned racial attacks, or that black and white children don't get on' (1989, p. 62). Barry Troyna, who worked mostly in a qualitative paradigm, responded as follows: 'I am sceptical about the application of quantitative research because I believe it is too crude to capture the subtle and complex nature of racism in education' (1991a, p. 429).

One may well feel that Troyna's point has considerable force, and that qualitative approaches in fields such as this allow for a flexibility of approach, giving rise to a richness in data difficult, if not impossible, to achieve within a quantitative framework. One of the problems with this approach, however, is that there is the danger of the researcher's pre-existing views being reified. An example of this originated from Foster's (1990) ethnographic account mentioned above, and specifically the claim that the students are, in part, responsible for their unequal educational outcomes (1990, p. 170). Paul Connolly responded that this claim was 'determined by his [Foster's] own political orientation' (1992, p. 133), an accusation refuted by Foster (1992) in terms which could easily be construed as personal abuse.

In effect, this discussion leads to the need for research to be undertaken in a variety of ways. That there is a relative scarcity of work looking at differential classroom behaviour by ethnicity undertaken in a quantitative paradigm is underlined by an American meta-analysis of such studies (Cooper and Allen, 1997). Whilst in many respects a poor piece of work, the authors undertook a comprehensive literature search, uncovering a mere 15 small-scale studies in the period 1969-90. Green (1985) undertook some quantitative work based on the Flanders observation schedule

for the Swann Report, *Education For All*, whilst Smith and Tomlinson (1989) were primarily concerned with attainment, option choices and school processes rather than behaviour as such. The current study, therefore, is a timely addition to the research base in this area of crucial importance.

Methodology of current study

The overall purpose of the study was to examine differential attainment in, and experience of, mathematics by ethnicity and gender. Experience of mathematics was operationalized as pupil interactions with the teacher. The motivation for this approach arose from the pre-pilot stage (see below) during which time I was noting what seemed important in terms of children's experience. It emerged strongly that the interactions teachers were having with children came under four broad categories: teacher (i.e. actually discussing the work with the children), administrator (sorting out equipment, giving permission to leave the room, and so on), disciplinarian (in which there was some definite sense of conflict) and other (normally relating to conversations on a peer-group basis). This experience, combined with prior reading, led to the hypothesis that, analysed by gender and ethnicity, different groups of children would have different patterns of interaction with teachers, from which one could learn about the experience in the classroom. Children constantly engaged in disciplinary interactions, for example, will have a different experience from those who are engaging with the teacher over the work they are doing, which will be different again from those having little direct engagement with the teacher at all. Whilst children's overall experience of the classroom will depend on many other variables – peer-group interactions, prior experience of schooling, family and wider community expectations, to give but a few examples – it was felt that concentrating on teacher–pupil interactions was targeting one key feature in children's classroom experience.

The approach taken, contrary to most studies in this field, was mostly quantitative. By sight I identified children as being male or female (in mixed schools) and according to broad ethnic groups: African/African Caribbean, Asian, white and other. Whilst it was only rarely a problem to identify boys and girls by sight, there were three problems with identification by ethnicity. One was that it was not always possible to do this reliably by sight, particularly if one was sitting at the back of the class. Another was that this 'broad banding' of ethnic groups brings together widely differing cultures and communities, the Asian group being a good example of that.

Over and above these two issues, there is a third, namely the right of individuals to define their own identity and ethnic affiliations. Certainly if

one was undertaking a questionnaire one could easily formulate a suitable question to address this point. Within this research design, however, matters would have been greatly more complicated if individuals had been consulted regarding their ethnic origin, or indeed if ethnic backgrounds were subdivided more than was done. What are presented, then, are the results of my observations and inferences as a white middle-class male, which need to be understood as such. Whilst this could well be considered to be a major limitation, useful results emerged from this methodology during the pilot stage, so it was felt appropriate to continue with it.

Given the identification of pupils as above, I noted interactions between the pupil and the teacher as to whether they were teaching, administrative, disciplinary or 'other'. Except for disciplinary which will necessarily be at the teacher's initiative, I additionally noted whether the interactions were at the initiative of the teacher or the pupil. Whilst in principle the differences between the categories were quite clear, in practice it was not always easy to distinguish between them, an example being that an offer from a teacher to give help with the work in hand could easily have a disciplinary agenda. To go at least some way to resolve these ambiguities when they arose, I used teaching in preference to administrative, and administrative in preference to disciplinary. After trialling early in the pilot section, I did not attempt to time the interactions.

Altogether, I spent 35 days in 10 different schools: 2 days in a 'pre-pilot' stage whilst sorting out a clear agenda; a pilot stage involving four schools over 6 days; and the main body of the fieldwork, considering six schools over 27 days, returning to the same girls' school, but otherwise visiting different schools. As well as the one girls' school, I also visited two boys' schools, one in the pilot stage and one in the main section. All the other schools were mixed. They were all comprehensive schools except for one special school at which I was not able to maintain the observation schedule because of the high ratio of staff to children. The percentage of children from minority ethnic backgrounds varied from 30% to 90% in these schools. Broadly speaking, of the five mixed comprehensive schools I visited, one was predominantly middle class, one was predominantly working class, and three represented a mixture of the two, one particularly noticeably so. Of the nine mainstream secondary schools visited, five used individualized schemes as the prevailing teaching method, with one of these schools making almost exclusive use of these materials during the observation period.

Whilst the fieldwork was undertaken in mathematics classrooms, there was no attempt made to claim either that differences found were representative of all subject areas or, conversely, that these results were appreciably different to what might be found elsewhere. Weak evidence for the latter

position comes from a comparison of examination results by ethnicity for both mathematics and overall, in which it would appear that any patterns of differential attainment overall are accentuated in mathematics (Tennant, 2003).

Whilst the observation following the schedule as described above was the main fieldwork approach undertaken, I used the time in classrooms to work in an ethnographic, inductive manner, noting what appeared to be important and reflecting on that. Results on classroom assistants are reported elsewhere (Tennant, 2001), with work on types of 'misbehaviour' being considered below.

Results

It rapidly became clear in examining the results emerging from the fieldwork that there were both points of commonality across the schools in the sample, and also large differences between them. Both aspects are considered below. The Appendix contains an aggregation of the results over the main section of the fieldwork: whilst this shows differences emerging by ethnicity and gender across all five schools, it does not show the differences between schools. Readers wishing to see the full data are invited to contact the author.

Considering the results first from an overall perspective, it was noticeable that there were large differences in total interactions between different schools. The lowest was 1.03 interactions per pupil per lesson at the pilot stage at the girls' school, the highest 2.90 at the boys' school in the main section. In itself this represents a big difference in terms of the classroom practices in different schools. Whilst one might consider that lower numbers of interactions would correspond to the longer discussions one might expect to have in individualized schemes, this was not borne out by the results. Lower rates of interactions overall, and particularly low rates of disciplinary interactions, corresponded to schools with relatively small differences between the interactions received by the groups identified, a point returned to below.

Contrary to the findings of other quantitative studies, for example Green (1985) and those reviewed by Cooper and Allen (1997), African Caribbean children, considered both together and also boys and girls separately, were found to be registering higher levels of interactions overall with their teachers than the average for all children in the survey, although slightly less than white children.

As with overall interactions, there were also large discrepancies between schools in the quantity of administrative interactions, varying in the main body of the fieldwork from 0.26 to 1.02 interactions per pupil per lesson. Even more than for overall interactions, one might consider

that an individualized scheme would give rise to such administrative requests as the need for certain types of equipment, help to find the right worksheet, and so on. Again, no such connection could be made, a point returned to below in the discussion.

As regards disciplinary figures, these again varied hugely from school to school, with four schools at approximately 0.1 interactions per pupil per interaction, going up to 0.689, corresponding to more than one every 4 minutes. Another way of viewing these figures is that the disciplinary interactions varied from 3% to 35% of all interactions in the pilot stage, and 7% to 21% in the main fieldwork.

In every school except one, African and African Caribbean children registered a higher number of disciplinary interactions than the mean average. This continued to be true when boys and girls were separated out. The extent to which this was the case varied, with only a small difference registered at the girls' school but, at one of the mixed schools, a twofold difference for boys and a threefold difference for girls.

As regards Asian children, it is a matter of great regret that, for methodological reasons, only one grouping is used for children coming from widely differing communities and cultures. Notwithstanding this, with the exception only of girls at one school, Asian children registered lower levels of disciplinary interactions than the average in all schools, in several cases well below.

Looking specifically at teaching interactions, African Caribbean children were, relative to total interactions, receiving teacher-initiated teaching interactions in line with all children. The pupil-initiated interactions, however, were lower than overall proportionately, and in some cases in absolute terms. For Asian children, these patterns were almost exactly reversed: whilst they had lower interactions overall, proportionately and in some cases in absolute terms, their pupil-initiated teaching interactions were greater than those overall. Ways of interpreting these figures are considered below.

That results vary considerably for children in the 'other' ethnic category is, from a statistical point of view bearing in mind the small number of children involved, hardly surprising. What emerged consistently, however, was that children from ethnic groups small in the classroom were receiving proportionately more interactions with the teacher, mostly for teaching and administrative purposes.

Discussion

Given the methodology as set out earlier, collecting data and presenting them as above is reasonably straightforward. Interpretation of the results,

however, is not so clear for two reasons. First, the types of interactions themselves need some careful unpacking in order to assess whether one group having a higher level of interaction than another represents, crudely, a 'good' or a 'bad' thing. Second, the assumption underpinning a study of this nature is that there 'should' proportionately be the same number of interactions per group, i.e. equality of opportunities is defined as meaning equality of outcome. Other definitions of equality of opportunities as the concept relates to classroom interactions have been considered, e.g. by Foster et al. (1996, pp. 44ff.). In addition, the implications of these findings in informing classroom practice need careful thought.

On the face of it, if one group of children is receiving a higher level of disciplinary interaction with the teacher than another, this is necessarily a bad thing. As noted above, however, individual children, and indeed groups of children, may be registering low levels of disciplinary interaction with the teacher not because they are behaving well as such, but because they are retreating from classroom activity altogether (see e.g. Hammersley and Turner, 1980).

There is also the issue as to whether the fact that children in certain groupings are receiving higher levels of disciplinary interactions from teachers tells you more about the teachers than the children. Whilst instances have been found of direct racism amongst teaching staff (e.g. MacDonald, 1988), this is outside my own experience as a school teacher, and the national debate now is constructed much more in terms of systemic racism, as considered in the MacPherson Report into the murder of the black teenager Stephen Lawrence (Home Office, 1999). Specifically in the case of African Caribbean children, the notion of a 'vicious spiral' of low teacher expectations leading to poor pupil behaviour resulting in the low expectations being vindicated has considerable credence. It is certainly the case that studies have found that African Caribbean children arrive in school at the age of 5 performing at a very similar level to all other children, only to leave at the age of 16 performing rather worse than most other groups of children, particularly boys (e.g. Gipps and Gillborn, 1996). In so far as this 'vicious spiral' is in operation, low teacher expectations will be only one of the influences on children: schools can, and should, do what they can to combat systemic racism, but these efforts will have only a limited effect if they are out of step with what is happening in society at large.

As regards administrative interactions, it is reasonable to suppose that all children will, from time to time, be needing to ask, for example, for equipment or a new exercise book, or for permission to go the toilet, and conversely that teachers will be needing to check that homework has been completed. As noted above, whilst it might seem reasonable to suppose that

individualized schemes will give rise to a greater number of such interactions, the fieldwork results did not bear this out. Indeed, whilst I did not attempt to formalize the notion of a 'well-ordered' school or class, what did seem to be emerging from the fieldwork was that low administrative interaction figures and, as discussed below, low interaction figures overall, corresponded both to smaller relative differences between different groups and to a 'well-ordered' situation.

As regards teaching interactions, those at the teacher's initiative, as with administrative interactions, can, particularly with more experienced teachers, have a disciplinary overtone. For example, if a teacher sees a child off-task, then the teacher may ask the child if s/he needs help as a positive way of dealing with that. Similarly children, if challenged verbally or non-verbally, in order to deflect any possible criticism may respond with a question about the work in hand, which would then count as a teaching interaction at the child's initiative. In addition, children who have listened properly to the instructions in the first place may be able to get on quite satisfactorily without the teacher's help. Against this, if work is well differentiated in the room, and if the teacher is able proactively to decide how to spend his/her time, then one would expect, in an 'ideal' situation, children to be receiving teaching interactions at much the same rate.

Pursuing this line of thought, it is instructive to consider the schools which have low differences between boys and girls, and between different ethnic groups. Whilst the sample is small, these are noticeably the schools which in addition have low rates of disciplinary, administrative and overall interactions combined with relatively high rates of teaching interactions at the teacher's initiative. These schools further correspond, in my professional judgement, to schools which can loosely be termed 'well-ordered'. The converse is also true: schools with high differences in overall interactions have high disciplinary and administrative rates combined with relatively low rates of teaching interactions at the teacher's initiative – and, in my judgement, more unstable atmospheres.

These findings are consistent with the following. In calmer situations with children having a stronger sense as to what is expected, teachers are able to decide to a greater extent how to spend their time rather than responding to issues raised. They are, therefore, better able to monitor their own interactions with children. Following from this, I suggest, is the idea that equality of opportunities in these terms is a result, not a cause, of a well-ordered classroom. Or to put this in another way, one is unlikely, starting from a school with large differences in teacher–pupil interactions between groups, to be able to make much difference by specifically targeting this aspect rather than more general school and classroom processes.

As stated earlier, the fieldwork was done in mathematics classrooms,

with only weak evidence to suggest that it may be the case that there are differentials to be found beyond those in other curriculum areas. It would, of course, be possible to explore this in a larger project following the same methodology. Also possible with a very much larger dataset would be the use of more sophisticated statistical analysis, which could then explore the possibility of relationships between such outcome measures as GCSE results and different types of interaction within a school, and also help to disentangle the effects of schools and individual teachers as opposed to the groups under consideration. A different approach would be to use the findings from the statistical work as a starting point for qualitative work in seeking to probe the differences found.

As regards how one might use this information, the primary need is for teachers to be aware of it, given that it can be the case that teachers are unaware of the extent to which they are favouring one group over another (e.g. Kelly, 1988). In this context, the words of Good and Brophy have strong resonance: 'This lack of awareness is one reason why, in too many classrooms, student gender, race, ethnicity, or culture predict the quality of students' learning opportunity' (1997, p. 25). For teachers to be aware that they are likely, in terms of quantity of interactions, to be favouring boys over girls, African Caribbean children over white children over Asian children, is, I think, helpful in terms of enabling teachers better to monitor their own performance.

There are, however, two problems here. First, if one is seriously expecting teachers to be monitoring their interactions in anything like a systematic way, one needs to consider how important this is likely to be given the very large number of other things teachers 'should' be doing. Expectations on teachers have greatly increased over the last 15 years, and one cannot reasonably continue in this direction without some compensatory decrease in other areas.

Second, as suggested above, monitoring in itself will be unhelpful in relatively unstable situations in which teachers spend much of their time reacting to issues in the classroom rather than proactively deciding on the use of their time. Progress in this respect will depend on overall school measures.

Clearly, there are many issues not explored in this work: quality of teaching would be one very important example. Notwithstanding this, clear patterns have emerged to indicate that children's experience of the classroom depends on their ethnicity. This work will hopefully form part of the pool of evidence in making the classroom a more equitable place for all.

Conclusion

Clearly emerging from the fieldwork are differential patterns of interaction between teachers and children grouped by ethnic background. African and

African Caribbean children, particularly boys, were seen to be disciplined more frequently than others, but engaging in fewer teaching interactions than overall, particularly at the pupil's initiative. The pattern with Asian children is almost exactly the converse of this, with particularly girls having fewer interactions with teachers overall, but relatively more at the pupil's initiative for teaching purposes. Whilst these patterns were consistent across the schools sampled, the extent to which the patterns were present differed markedly from school to school.

Any meaningful debate on the differential behaviour of children in the classroom by ethnic background needs, I would suggest, to hold these two findings in tension. The element of commonality suggests that cultural factors within ethnic communities, combined with the overall nature of society and education, result in different prevailing patterns of experience in the classroom by ethnic background. The extent to which this varies from school to school suggests that there are steps which schools can, indeed should, be taking in order to work towards a situation whereby children's experience of schooling does not depend on their ethnic background. Evidence has emerged, however, which suggests that these steps need to be geared towards whole school issues rather than specifically addressing the issue of differential behaviour in the classroom by ethnicity.

Appendix

Table 1 shows an aggregation of the data collected in the five schools in the main body of the fieldwork. TPI and TTI are teaching interactions, respectively at the pupil's and the teacher's initiative. Similarly API and ATI are administrative interactions. D are disciplinary interactions. Where the numbers of children are fractional, this corresponds to lessons at which I arrived late or which finished early. The figures in the body of the table give the average number of that type of interaction per pupil per lesson. As explained above, this summary gives a good sense of the patterns which emerged across all schools, but obscures differences which emerged between schools. Readers wishing to see the full dataset are invited to contact the author.

Table 1 Classroom interactions (average per pupil per lesson)

	No. pupils	TPI	TTI	API	ATI	D	Other	Total
Boys								
White	481.5	0.81	0.44	0.45	0.31	0.40	0.12	2.53
Asian	279.1	0.67	0.33	0.40	0.21	0.27	0.04	1.91
African/AC	307.1	0.57	0.51	0.45	0.37	0.55	0.06	2.51
Other	95	0.41	0.29	0.20	0.15	0.38	0.08	1.52
Total	1162.7	0.68	0.42	0.41	0.29	0.41	0.08	2.29
Girls								
White	294.6	0.69	0.34	0.34	0.18	0.14	0.03	1.71
Asian	312.2	0.50	0.21	0.23	0.10	0.06	0.03	1.13
African/AC	189.2	0.60	0.35	0.28	0.15	0.19	0.02	1.59
Other	50	0.42	0.18	0.00	0.08	0.12	0.00	0.80
Total	846	0.59	0.29	0.27	0.13	0.12	0.03	1.42
All								
White	776.1	0.76	0.40	0.41	0.26	0.30	0.09	2.22
Asian	591.3	0.58	0.27	0.31	0.15	0.16	0.03	1.50
African/AC	496.3	0.58	0.45	0.38	0.29	0.41	0.05	2.16
Other	145	0.41	0.26	0.13	0.12	0.29	0.06	1.27
Total	2008.7	0.64	0.36	0.35	0.23	0.29	0.06	1.92

AC: African Caribbean.

TPI: teaching interaction at pupil's initiative.

TTI: teaching interaction at teacher's initiative.

API: administrative interaction at pupil's initiative.

ATI: administrative interaction at teacher's initiative.

D: disciplinary interaction (teacher's initiative).

Other: peer-group conversation etc.

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