Introduction

South Asian Muslims, comprised mostly of Pakistanis and Bangladeshis, represent one of the fastest growing immigrant populations in the United Kingdom, particularly in the city of London. While this in itself is a reason to examine these populations in greater detail, recent events have brought them into the spotlight. News stories about Muslims have increased in frequency since 2001, with many stories painting negative pictures of Muslims as outsiders within the country's borders (Billig, Downey, Richardson, Deacon, & Golding, 2006). With several terrorist scares pointing to young South Asian Muslims, the government has turned its attention to understanding the reason for disaffection amongst these groups. Both the Bangladeshi and Pakistani communities in London are extremely young with close to half of all Pakistanis and over half of all Bangladeshis under the age of 25 (Mayor of London, 2005). Questions remain as to how these groups can be integrated into mainstream society. Education can play a key role for this disenfranchised group, by either marginalizing them further with low attainment rates or by creating a pathway to good employment opportunities and social integration. Education is critical in strengthening social cohesion by encouraging civic participation and providing young people with the skills to contribute positively to society.

Assisting these communities to compete successfully in London's global marketplace is an investment in London's economic future as well. With large numbers of Bangladeshi and Pakistani youth reaching employment age, it is important to ensure they have the right skills and competencies to attain employment in highly skilled jobs that are concentrated in the city and further London's economic success rather than to drain its social service resources. Education is the key to developing these skills and providing access to these jobs.

To be successful in developing these skills in young people, it is important for the schools to be responsive to the unique challenges of these communities. Providing the same education to these groups as they have to the indigenous population or to other minority groups may not be effective. Therefore schools must examine the successes and failures of their programs with these communities in order to serve them properly.

The educational attainment of London's Bangladeshi and Pakistani communities has usually been studied under the umbrella groups of "Muslim" or "South Asian" rather than as disaggregated groups. Though these populations may have similar histories and cultures, they also have distinct characteristics. Bangladeshi communities on average face greater poverty, segregation, and language barriers than Pakistani communities. Despite this, national data suggests that Bangladeshi students have shown bigger academic gains in recent years. The

focus of this paper is to examine the specific context of London with regard to educational and societal factors and to explore factors that may explain differential academic gains. This information can be used to determine how to strengthen the education of both groups.

Background Information

General Discussion around History and Migration

Migration is a global phenomenon, largely driven by the forces of globalization (Lupton & Power, 2004). Migration is not unique to Western or industrialized societies. However, similar patterns and trends can be seen in the settlement and lifestyle patterns of migrant communities in industrialized societies such as the United Kingdom (UK) and the United States (US). The ethnic make-up of industrialized societies is being transformed as a result of largely young and growing migrant populations (Suárez-Orozco & Suárez-Orozco, 10/23/2006). The UK population grew by 4% in the 1990s and 73% of that increase is attributable to a growth in the ethnic minority population (UK census 2001). Industrialized societies such as the UK have benefited from the growth of the minority population. In the face of a shrinking and ageing indigenous White population, the UK economy has been boosted by the increase of human capital from the minority communities.

However, growing minority populations have also made visible the deprivation of these communities in industrialized societies. Research on immigrants and ethnic minorities indicates that minority communities face greater socio-economic disadvantages in comparison to the indigenous populations (Platt, 2005). Particular minority groups in the US such as Blacks and Hispanics suffer from high unemployment rates, low educational attainment, poverty and often segregation from the indigenous population (Iceland, 2003). These disadvantages occur for a number of reasons such as discrimination, racism, prolonged government inaction, and poor public policy.

Governments in industrialized societies with growing ethnic communities are now confronted by issues of how to integrate these communities and ensure that they have equal access to the same opportunities that are available to the indigenous population, which is critical given that the young people from these communities will be integral to the economic future of the country.

The Bangladeshi and Pakistani communities are the most socio-economically disadvantaged communities in London (Mayor of London, 2005). However, both of these communities are growing rapidly, and about half of the population of both these communities is under the age of 25. Hence they will form a critical part of the future labor force (Mayor of London, 2006). Raising the

educational performance of these two communities and understanding the variables to their success is imperative for policymakers.

History of Pakistani and Bangladeshi Communities in the UK

In the early 1950s, the UK government experienced a labor shortage in the manufacturing industry. The UK government openly encouraged migration from the former colonies of UK to fill in the vacuum of jobs that the indigenous population had begun to perceive as being undesirable as their level of education rose and they became more socially mobile (Tackey et al, 2006).

The Pakistani diaspora arrived in the early 1950s—slightly earlier than the Bangladeshi population—with immigration peaking around 1961. They settled and found work in the textile, metalworking, and car industries in the North of England. However, a substantial proportion of the Pakistani community settled in the inner city of London. The Bangladeshi community is the most recent ethnic minority to arrive in Britain (Peach, 1996). This population started to arrive in the 1960s; immigration escalated in the 1970s and 1980s as many of the men who had settled earlier brought their wives and families to the UK. A majority of the Bangladeshi population settled around London, largely concentrated in the borough of Tower Hamlets. They worked mainly in garment and textile industries and in other unskilled professions (Haque, 2000).

Both the Pakistani and Bangladeshi populations came from poor rural areas in their original countries. The Pakistani diaspora largely came from Mirpur, where the main industry was agriculture. Most of the Bangladeshi diaspora came from a single district, Sylhet in Northeast Bangladesh, a rural area where most of the population work in either agriculture or the fishing industry. The motivation of these two populations for migrating was largely similar: to remit money back to Pakistan and Bangladesh and invest in land and housing. (Tackey et al., 2006).

Both communities engaged in a process of "chain migration" where those already in the UK would collectively raise money and help someone from their village to immigrate. This lead to highly concentrated groups of Pakistanis and Bangladeshis, with the Bangladeshis settling mostly in London. This concentration was largely due to proximity to the workplace, but it was also derived from the need to create support networks and protect themselves from a hostile indigenous population (Dench, Gavron, & Young, 2006). The flow of Pakistani and Bangladeshi immigration was eventually slowed down by increasingly restrictive UK immigration laws (Haque, 2000).

In the late 1970s, the UK economy was in recession and the manufacturing industry went into decline. Large numbers of Bangladeshi and Pakistani men became unemployed in the 1980s and early 1990s. The changing structure of the economy led to a rise in skilled, non-manual occupations for

which many of the first-generation Pakistanis and Bangladeshis were unqualified (Tackey et al, 2006).

The insecurities and instability of employment created dependency on the welfare system and also on the informal community support structure (Dench, Gavron & Young et al, 2006). The inability to speak English created multiple barriers for both communities as it hampered their ability to find employment. The Pakistanis attempted to escape poverty by entering into self-employment and investing in home ownership (Mayor of London, 2005). Apart from a handful of entrepreneurs, the Bangladeshi community did not have the financial capital to follow suit.

The majority of first generation of Bangladeshis and Pakistanis—who came to the UK with the intention of creating enough capital to go back to their respective countries—settled in the UK and have not gone back. This is because they did not manage to amass the capital to go back and have to continue sending remittances. It is also because their sons and daughters, who had been born and brought up in the UK, did not share the same dreams as their parents of settling in Pakistan or Bangladesh and regard the UK as their home. Hence, first-generation Bangladeshis and Pakistanis continue to stay in the UK so that they can be looked after by their children in their old age (Mayor of London, 2005).

Profile of the Pakistani Population in London

The number of Pakistanis in London in 2001 was 142,749, an increase of 63% since 1991 (UK Census 2001). The Pakistani population is slightly more dispersed than the Bangladeshi population. Nonetheless, the London Pakistani population constitute around one-fifth of the national Pakistani population. There are three main concentrations of Pakistani residents in London. The largest is in North East London, in the boroughs of Newham, Waltham Forest and Redbridge. Newham is unique in that it is one of the few majority-minority ethnic boroughs in the UK. The Pakistani population in these three boroughs is almost 53,000, which is well over a third of the total London Pakistani population (Mayor of London, 2005).

Profile of Bangladeshi Population in London

According to the UK Census 2001, there are around 153, 893 Bangladeshis in London, which accounts for 55% of all Bangladeshis in England and Wales. More than 80% of these Bangladeshis live in Inner London. Within Inner London, most Bangladeshis live in Tower Hamlets, where they make up 33% of the population. Like Newham, it is one of the few majority-minority boroughs.

Common Factors Between Bangladeshi and Pakistani Communities

The Pakistani and Bangladeshi groups are comparable to each other because of their shared history and shared religion, Islam. The customs, practices, and family structures of both communities are similar and have often been aggregated when categorizing ethnic groups (Mayor of London, 2006). According to the UK Census 2001, 92% of Pakistanis in London and the vast majority of Bangladeshis are Muslim, at 93%. This is the highest percentage of a single religion in any ethnic group (Mayor of London, 2006).

Education

The British educational system is similar in many ways to the US system, but certain key differences are present. The first difference involves age groupings in schools. Primary schools enroll students from ages 5 to 11, after which students move to secondary schools until the age of 16. Students are required to stay in school until the end of June in the year they turn 16. Some middle schools exist, serving students ages 8 or 9 until 11 or 12, but they serve a small minority of students.

The Education Reform Act of 1988 separated the UK educational system into four segments: Key Stage 1 from 5 to 7 years old; Key Stage 2 from 7 to 11 years; Key Stage 3 from 11 to 14 years, and Key Stage 4 from 14 to 16 years. At the end of each stage, students are assessed by a national standardized test. The most critical of these Key Stage exams are the General Certificate of Secondary Education (GCSE) examinations at the end of Key Stage 4, when students are sixteen years old. These tests determine students' eligibility for further study.

GCSE grades range from a maximum of A* to a minimum of G and reflect both in-class assessments and an examination at the end of the course. Students who receive five or more grades within the passing range of A*-C are eligible to continue university-track education. These students study for two more years to take the General Certificate of Education Advanced Level (GCE A-level) exams. These A-level exams are used by universities in conjunction with grades for admissions decisions. Students whose GCSE grades do not qualify them for a university-track education may either find employment or study for the General National Vocational Qualifications (GNVQs) in various technical fields.

Access to further education hinges on high GCSE scores. Data has shown that while ethnic minorities are over-represented in higher education relative to the overall UK population, this may be skewed due to the larger numbers of minority youth. More importantly, most of these college-bound minority students are Indian and Chinese, while other ethnic groups, particularly Black Caribbeans, Pakistanis, and Bangladeshis, are underrepresented. This is particularly true in

prestigious institutions, such as the Russell Group members ("Segregation, 2006 style," 2006) – 20 top research universities in the UK including the University of Cambridge, the University of Oxford, and the London School of Economics ("The Russell Group," 2006). Tariq Madood, a researcher from Bristol University, attributes the majority of this discrepancy to A-level scores, which are strongly related to ethnicity and socioeconomic class ("Segregation, 2006 style," 2006). In order to equalize A-level examination results, GCSE attainment must be improved to allow students access to these higher levels of education.

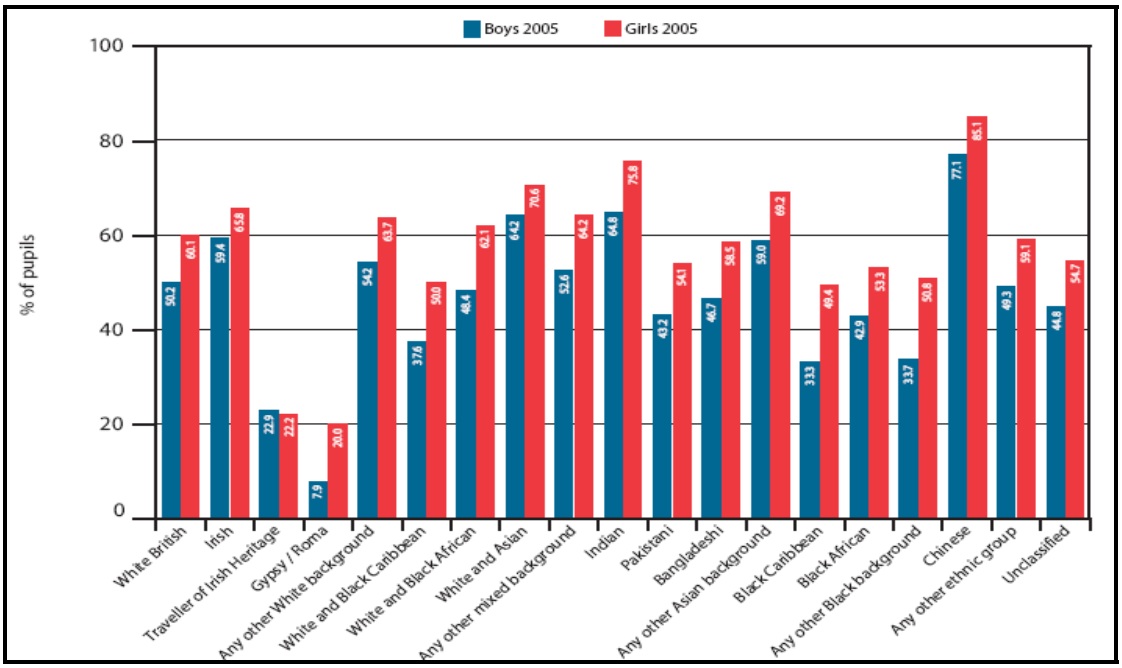
UK secondary schools include both private (state-maintained) schools and public (independent) schools. Since these definitions are the opposite of the American system, we will henceforth use the words "maintained" and "independent" to refer to this distinction. Independent schools, similar to US private schools, require hefty tuition fees and are accessible only to wealthy students and a small minority of low-income students who receive scholarships to attend. The majority of middle- and low-income students attend maintained schools funded by the government.

Some maintained schools were founded before government sponsorship, including many religiously affiliated schools. Students may exercise some degree of school choice within the Local Educational Authority (LEA), and school boards of religiously affiliated schools may give preferential admissions based on religion. These options combine with housing choice to give parents some control in choosing schools.

Educational Attainment

Throughout England, reports indicate that Bangladeshi students are attaining higher scores than Pakistani students (Haque, 2000). This data is shown graphically in *Figure 1*:

Figure 1. **Percent of Students Attaining 5+ A*-C GCSE Scores By Ethnicity in 2005**



Source: Department of Education and Skills, "Ethnicity and Education" (2006), p.64

According to this graph, the nationwide passing rate on the GCSE exams in 2005 was 55%. Bangladeshi students overall achieved a 53% passing rate, while only 48% of Pakistani students passed (Department for Education and Skills, 2006).

Educational Improvement

According to nationwide data, Bangladeshi achievement rose by 5%, while Pakistani students met the national average improvement of 3% between 2004 and 2005. The achievement gap between Bangladeshi students and the nationwide average narrowed from 4% to 2%, while the Pakistani achievement gap remained constant at 7% (Department for Education and Skills, 2006).

Educational data from Tower Hamlets, where the primary concentration of Bangladeshi students in London is located, indicates vast improvement in recent GCSE attainment. In 1990, only 9% of Bangladeshi students achieved acceptable GCSE scores, compared to 10% of white Tower Hamlets residents and 35% nationwide. By 2002, Bangladeshi students outperformed white residents, with 46% achieving passing grades compared to 30% of white students and 51% nationwide. The achievement gap is even more apparent in Bangladeshi males, who outperform white males 43% to 25% (Dench, Gavron, & Young, 2006).

Unfortunately no similar data is available for Pakistani students in Newham, Redbridge, and Waltham Forest. One study does suggest that in

schools in these areas with large numbers of Indian and Pakistani pupils, the Pakistani students often perform at lower levels, particularly in mathematics and science (Abley, Jaffar, & Gent, 2004).

Poverty

Economic Activity in the Bangladeshi and Pakistani Communities in London

Overall, minority groups in London tend to be far more disadvantaged in the labor market in comparison to the indigenous population. (Open Society Institute, 2005). The impact of an "ethnic penalty" in the labor market is felt acutely in the Pakistani and Bangladeshi populations (Tackey et al., 2006).

Table 1. **Employment Profiles**

	Employment (full-time) %	**Self-employment % (male aged 25 or over)**	**Unemployment %**
Bangladeshi	17	9	21
Pakistani	27	17	12
London average	43	15	7

Source: UK Census (2001)

Pakistanis face higher unemployment rates than the London average. However, Pakistanis have higher rates of self-employment than the London average (Tackey, et al (2006). According to the UK Census 2001, Pakistanis were one and a half times more likely to be self employed, owning small-scale businesses such as grocery stores and restaurants. While self-employment is not an indication of affluence, it implies that a larger percentage of the Pakistani population has the necessary capital for new businesses than the Bangladeshi population. The Bangladeshi community has the lowest rates of economic activity and the highest unemployment rates in London. According to a 2006 report conducted by the Greater London Authority, 42% of Bangladeshi children in inner London lived in workless households, in comparison to 34% of Pakistani children and 27% of White children (Open Society Institute, 2005). The concentration of unemployment in neighborhoods, according to Wilson (1987, cited in Natriello, McDill & Pallas, 1990) is likely to have a negative impact as it prevents young people from having access to role models who can demonstrate a connection between schools and good jobs.

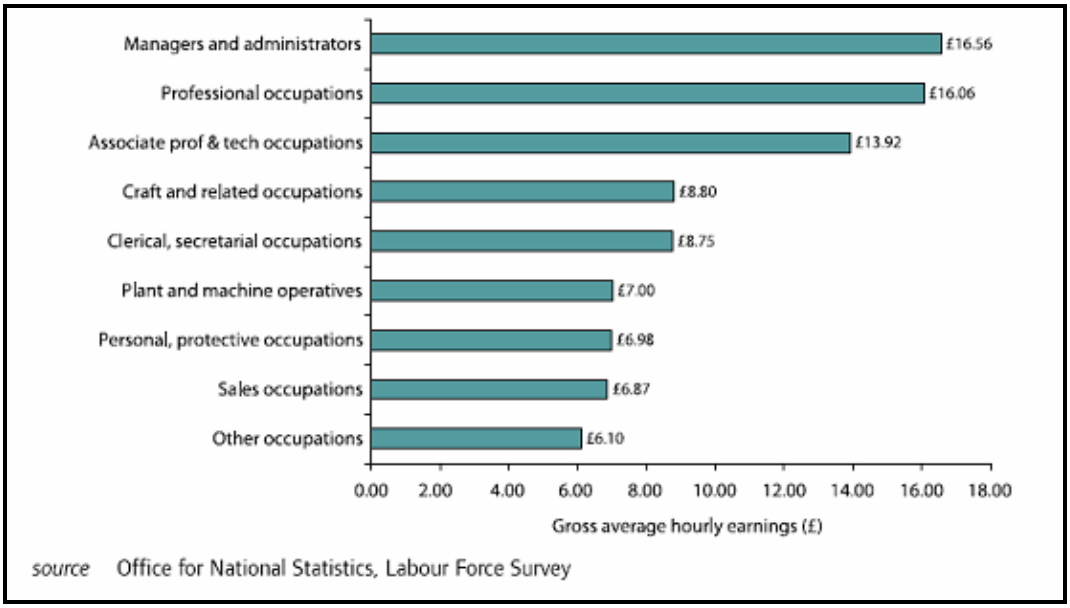
Income Poverty in the Bangladeshi and Pakistani Communities

The official UK child poverty measure is the proportion of children living in households with disposable income below 60 per cent of the median of the national income. According to a report produced by the Mayor of London's office (2004b) 69% of London's Pakistani/Bangladeshi children were living in poverty compared to 27% of White children.

On average, the Bangladeshi community is more likely to be employed in low-level and menial positions. On average, they earn less than the Pakistani population even when employed in similar jobs (Mayor of London, 2004a). Over 16% of Bangladeshis are in unskilled occupations in comparison to around 9% of Pakistanis, with the London average being around 8.5%. The Pakistani community has a slightly larger percentage of people in professional occupations than average, but they are slightly behind the London average in higher-grade positions of managers and senior officials (UK Census 2001). Only 4% of the Bangladeshi population is in higher managerial and professional occupations.

In general, there are significant earning differences between the White population and ethnic groups within similar occupation categories (Mayor of London, 2002). The Bangladeshi population has the lowest hourly rate of earnings in comparison to other ethnic groups. On average, they earn 60% of the hourly earnings of Pakistanis and 40% of the hourly earnings of the White population.

Figure 2. **Earnings estimates of employees by ethnic group, Greater London residents 2001**



Source: Mayor of London (2002); p. 36

Household Composition and Household Overcrowding

The impacts of income deprivation and high unemployment rates are exacerbated in the Bangladeshi community if we take into account household composition. Over 29% of Bangladeshi households have six more or people in comparison to 15% in Pakistani households and 2% of white households. Bangladeshis are most likely to live in overcrowded housing. An occupancy rating of -1 indicates that households have one room too few; 68% of Bangladeshis live in accommodation with this occupancy rating in comparison to 38% of Pakistanis and a London average of 21% (Mayor of London, 2005). Thus young Bangladeshi people are at a greater probability of not being able to have the material and resources to enable them to effectively study than the Pakistani community.

Home Ownership

Home ownership creates a safety net (Orfield, Lecture for A109 – Educational Policy and Urban Poverty on October 4, 2006) and allows families to accumulate wealth. Pakistanis have a greater advantage than the Bangladeshi community when it comes to home ownership. A substantial proportion of Pakistanis are homeowners, whereas the Bangladeshis are disproportionately concentrated in social housing (Tackey et al, 2006).

Social renting offers subsidized rents for low-income families who do not have sufficient capital to secure a mortgage to own a home. The percentage of Bangladeshis living in social rented household in Tower Hamlets is above average at 82%. According to research, a strong correlation exists between unemployment and social rented accommodation (Mayor of London, 2004a).

Table 2. **Home Ownership and Social Housing Rates by Ethnicity**

	Home ownership	**Social housing**
Bangladeshi	26%	63%
Pakistani	58%	13%

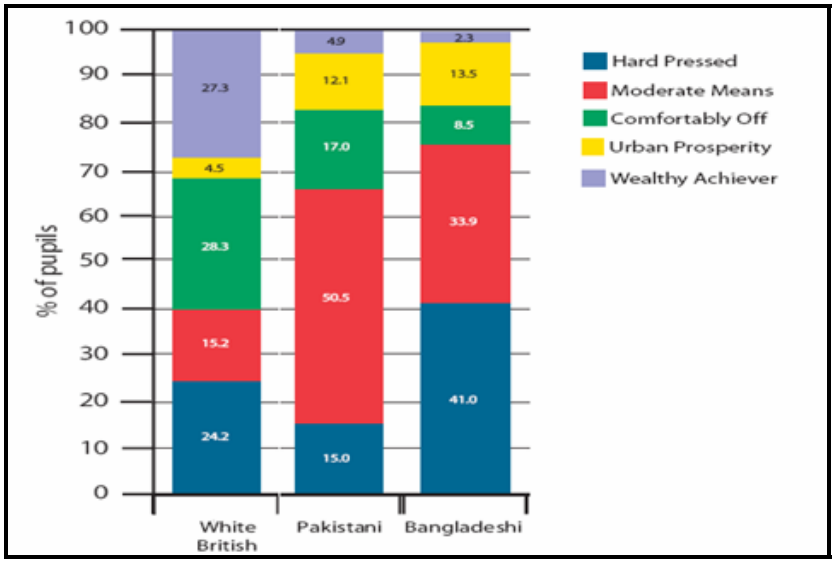
Source: Mayor of London (2005)

Indices of Deprivation

Most deprivation indicators conclude that Bangladeshis are the most disadvantaged community in London. Bangladeshis live in areas with high levels of multiple deprivation, with great disadvantage in employment, housing, and access to public services. Over 46% of Bangladeshi pupils live in the 10% most deprived areas in London (Department for Education and Skills, 2006).

A commonly used indicator, the ACORN classification, measures people's purchasing habits and attitudinal characteristics according to their neighborhood. This classification system shows that Bangladeshis fare the worst of all ethnic groups. Over 40% of Bangladeshi pupils are in the hard-pressed category in comparison to 15% of their Pakistani peers and 24% of their White peers.

Figure 3. Percentage of pupils in maintained primary and secondary schools (as of January 2005) according to ACORN classification.

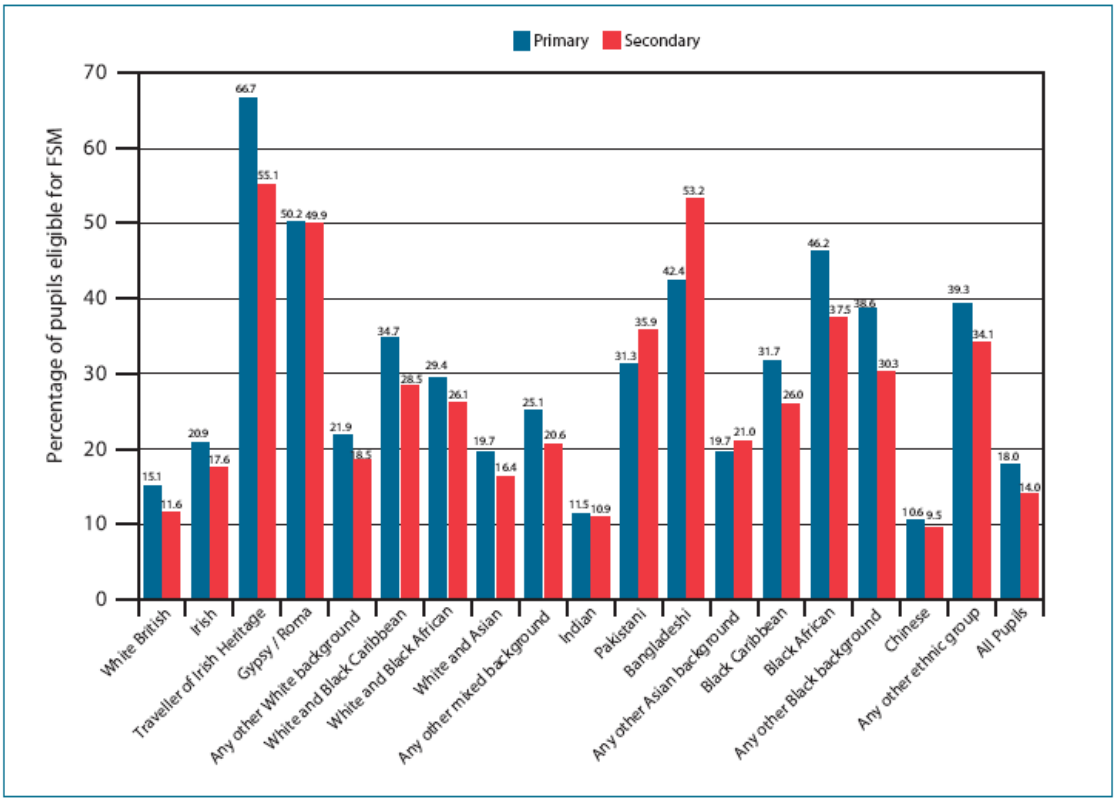


Source:Department of Education and Skills (2006); p. 20

Free School Meals

A common indicator of poverty in schools is eligibility for Free School Meals (FSM). Nationwide data on FSM disaggregated by ethnicity reveals that a greater percentage of Bangladeshi students are below the poverty line than Pakistani students. The following graph displays the proportion of FSM-eligible students by ethnicity:

***Figure 4*. Percent of Students Eligible for FSM by Ethnicity**



Source: Department for Education and Skills (2006); p. 16

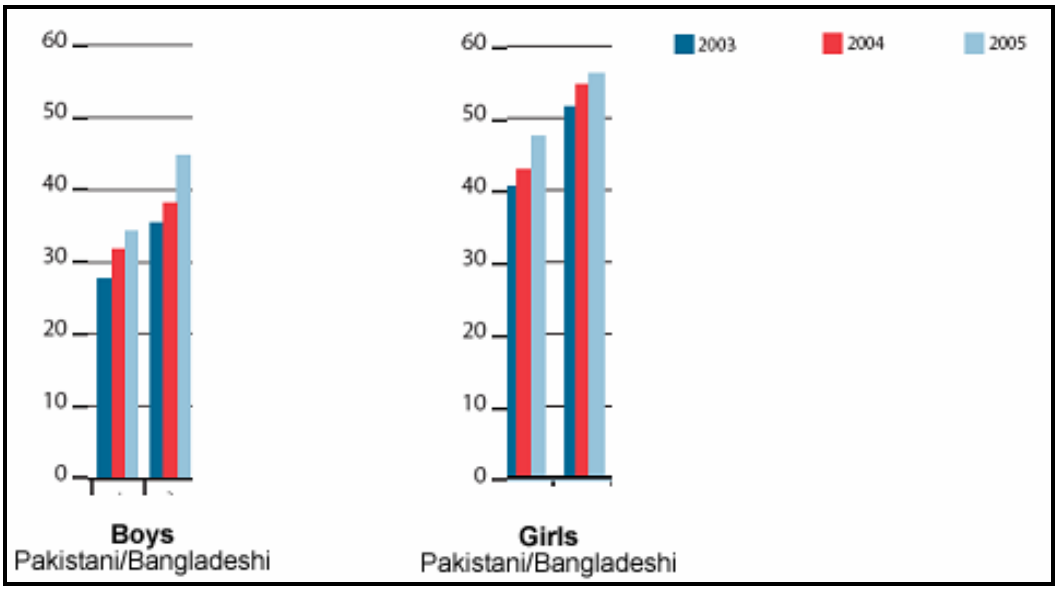
This graph shows that 53.3% of Bangladeshi students are eligible for Free School Meals, compared to 35.0% of Pakistani students.

Poverty and Education

Existing research indicates that poverty is a key factor in explaining low educational attainment amongst communities, as children from low-income families posses neither the "cultural capital" nor the financial capital that middle-class children have in order to ensure educational success (Iceland, 2003). High poverty levels are linked to low educational performance.

Nationally, students of both subgroups who qualify for FSM achieve at higher levels than the average FSM-eligible pupil, though Bangladeshi students outperform Pakistani students significantly. This data is shown graphically in *Figure 5*:

Figure 5. **Percentage of FSM-Eligible Student Achieving 5+GCSE Passing Scores**



Source: Adapted from Department of Education and Skills "Ethnicity and Education (2006); pp 66-67

In light of the negative effects of poverty on education, one would expect lower educational attainment and improvement from Bangladeshi students compared to average, and compared to Pakistani students. On the contrary, Bangladeshi students seem to be overcoming the barriers created by poverty to perform better than one would expect.

Segregation

Existing research has found significant correlations between residential segregation and low educational attainment, high rates of unemployment, and poor housing (Borjas, 1997; Wilson, 1997). According to Peach (1996), whilst Britain does not have ghettos equivalent to the US, Bangladeshis are the most isolated community in the UK.

The Bangladeshi community in Tower Hamlets is living in the most deprived local authority area in the UK. They are highly segregated and isolated from the white community as well other immigrant populations (Aftab, 2005). The Pakistani communities in the boroughs of Newham, Redbridge and Waltham Forest also are isolated from the white community, but they are integrated with other immigrant groups (Peach, 1996).

Some academics argue that residential segregation is dictated by both constraints and choice (Burgess & Wilson, 2004). Borjas (1997) states that

"ethnic residential segregation, however, does not arise randomly. Persons choose the types of people with whom they wish to reside" (p. 27). Bangladeshi people are voluntarily choosing to live in clustered and concentrated communities to preserve social and ethnic ties (Aftab, 2005). Whilst the initial decision to live in Tower Hamlets may have initially been made by the first generation of Bangladeshis, few of the second or third generation have moved away (Tackey et al, 2006).

Studies indicate that high concentrations of ethnic minorities have adverse economic effects and reduce labor market participation of those communities. In research conducted by Clark and Drinkwater (2002), a strong relationship was found between minority concentration and high unemployment. Employment levels in areas of high minority concentration were 41% lower for Bangladeshi men than employment levels in areas of low minority concentration (Tackey et al., 2006).

The combination of poverty and high levels of segregation reduces the possibility of young generations of Bangladeshis escaping inter-generational poverty. Bangladeshis are limited in their social and economic choices and are excluded from opportunities that may arise from social interaction with other communities.

The segregation of Bangladeshi pupils is due to a combination of factors. Tower Hamlets schools have changed drastically since the 1980s. These changes have been researched intensively by Dench, Gavron, and Young (2006). In 1981, the percentages of Bangladeshi pupils in primary and secondary schools were 32% and 18% respectively. These numbers rose to 62% and 54% by 2004. In addition to the greater numbers of Bangladeshi pupils, the schools have also seen a significant demographic change due to the exercise of school choice. While Bangladeshi parents are conflicted in school decisions due to dueling desires for same-sex education and greater exposure to English, many white parents are unequivocally in support of segregation. These parents are often resentful of the special treatment given to Bangladeshi children under Section 11, which provides extra resources for students with English as an Additional Language (EAL). In addition, they feel threatened by the growing population of "Asians," bitter about this new group's academic achievements relative to their own, and uncomfortable due to the cultural differences that prevent each group from understanding the other. All of these factors have pushed white parents to find ways to separate their children from Bangladeshi students.

According to Dench, Gavron and Young (2006), a large number of White parents have decided to move their children to other schools or to move the entire family to another neighborhood. Additionally, Roman Catholic state-maintained schools can give preferential admissions to Catholic and Christian students, leaving little room for Muslim Bangladeshi students and encouraging segregation.

Tower Hamlets schools show alarming amounts of segregation. In 2002, one-quarter of Tower Hamlets secondary schools enrolled less than 3% Bangladeshi pupils, while another quarter enrolled less than 20% non-Bangladeshi students, compared to the overall demographic split of 54% Bangladeshi to 46% non-Bangladeshi. Altogether, fully half of all Tower Hamlets secondary schools have populations that are much more insular than the borough as a whole.

In sum, Bangladeshi students face greater poverty based on a number of indicators and greater segregation from other ethnic groups than Pakistani students. Nevertheless, they seem to be performing at higher levels and improving at faster rates academically. This study seeks to determine whether these nationwide patterns are reflected in London schools and what additional factors could explain differences in academic performance between these two groups.

Methods

Through the Department for Education and Skills (DfES) "The London Challenge. Families of Schools" report (2004), data from all London secondary schools which enroll students from age 11 through 16 was obtained. This data, disaggregated by school, includes enrollment rates, sex, ethnicity, percentage of students eligible for Free School Meals (FSM), percentage of students in English as an Additional Language (EAL), and standardized test (GCSE) data. The standardized test data includes average scores, the percentage of students obtaining 5 or more scores of A*-C—selected because that criterion qualifies students to pursue university-track studies, and the number and percentage of students passing specific subject tests.

Several analysis methods were used on this data. First, educational attainment was examined. Using linear regression analysis, the correlation coefficient between percent Bangladeshi and percent obtaining 5+ A*-C GCSE scores in 2003 was calculated using the square root of the variance (R^2) and including the sign of the slope (+ or -). The slope itself was labeled as the regression coefficient, b_1, though no controls were added to the Ordinary Least Squares (OLS) regression. A similar calculation was made for Pakistani students. To increase the validity of the analysis, only schools that included 10% or more students of the analyzed ethnicities were included. While the cutoff was somewhat arbitrary, we decided that it provided us with enough schools to make utilizable calculations but reduced random variation unrelated to these subgroups from schools with insignificant subgroup populations.

Second, the percentage of schools achieving at or above the enrollment-weighted London average was calculated for schools with 10% or more Bangladeshi students and for schools with 10% or more Pakistani students. The

metric utilized was the percentage of students obtaining 5+ A*-C GCSE grades in 2003.

Next, the percentage of schools progressing at a pace equal to or faster than the enrollment-weighted London average was calculated for schools with sizable Bangladeshi and Pakistani populations. The average yearly improvement from 2000 to 2003 in the percentage of students obtaining 5+ A*-C GCSE grades was used as a metric for educational improvement. While we recognize that four years of data is a limited amount, we still believe that this provides insight into educational attainment trends. Another limitation is that this data compares passing rates of different cohorts of students. Particularly for smaller schools, cohort effects may distort the picture. Taking the average of several years of data should minimize these distortions.

One limitation for all of these measures is the lack of data disaggregated by student and therefore by ethnicity. While this prohibits direct analysis of the attainment and educational progression of Bangladeshi and Pakistani students, two pieces of information can still be obtained. The first is an indicator of how the proportion of the subgroup within the school affects educational attainment. As the subgroup grows, what effects do the increases in community support and the insularity of having students of a common ethnicity have on students' education? The second piece of information is an indirect comparison of these populations by comparing schools with sizable proportions of students from these groups, as explained in the second and third analysis methods described above. Of course, subgroups within a school may have different scores than the overall school population. Nevertheless, it is useful to compare school quality of schools attended by each ethnic group.

Several additional correlations were obtained in the same manner explained above, using linear regression analyses. In all correlations relating the percentage of students in a school of a particular ethnicity, only schools with 10% or more of that subgroup were included in the calculation. These correlations related % ethnicity, % EAL, % FSM, and GCSE attainment as measured by the percentage of students with 5+ A*-C GCSE grades.

To gauge segregation, Massey and Denton (1988) suggest several measures. Since concentration, centralization, and clustering require spatial data that is not included in the DfES report, two metrics of segregation were calculated. The first, the dissimilarity index, calculates the evenness of ethnic distribution between schools, in this case London secondary schools. If students are perfectly distributed in schools, the proportions of each ethnicity within each school should be identical to the proportions of each ethnicity in the aggregate group of London secondary students. The dissimilarity index varies from 0 to 1.0, with 0 indicating perfect evenness and minimum segregation and 1.0 indicating uneven distributions with maximum segregation. According to Massey and

Denton, dissimilarity indexes from 0 to 0.3 indicate low levels of segregation, from 0.3 to 0.6 are moderate, and above 0.6 reflect high segregation.

The dissimilarity index was calculated using the following equation, taken from a report by Burgess and Wilson (2004):

$$D = \frac{1}{2}\sum_{i=1}^{N}\left|\frac{Xi}{X} - \frac{(Ti - Xi)}{(T - X)}\right| \qquad (1)$$

where Xi is the number of students of ethnicity x in school i, X is the number of students of ethnicity x in the population (London secondary schools), Ti is the total number of students in school i, and T is the total number of students in the population.

This equation was adapted to calculate pairwise dissimilarity indexes that measure segregation levels between two groups. The new equation is as follows:

$$D = \frac{1}{2}\sum_{i=1}^{N}\left|\frac{Xi}{X} - \frac{Yi}{Y}\right| \qquad (2)$$

with the new symbols Yi indicating the number of students of ethnic group y in school i, and Y indicating the number of students of ethnic group y in the aggregate group. This index also ranges from 0 to 1.0. A large value reflects extreme segregation between the subgroups, with group y proportionally underrepresented in schools where group x is overrepresented, and vice versa. A small value reflects strong integration between the subgroups, with group x represented proportionally equally to group y.

The second aspect of segregation measured in this paper is the exposure of a group to other groups; that is, the probability that a member of one group will interact with members of another group. The isolation index measures the negative of exposure: the probability that a member of that group will interact with other members of his group. This index also ranges from 0 to 1.0, with 0 representing no isolation and maximum exposure to other ethnicities, and 1.0 indicating maximum isolation and no exposure to other ethnicities. The equation for the isolation index, as replicated from Burgess and Wilson's study (2004) is:

$$I = \frac{1}{2}\sum_{i=1}^{N}\left|\frac{Xi}{X} - \frac{Yi}{Y}\right| \qquad (3)$$

with symbols consistent with equations (1) and (2) above.

The ethnicity categories used in the segregation indexes were consistent with those of the original DfES report from which the data was extracted. Three

aggregate categories were added as well: White, containing White British, Irish, Traveler of Irish Heritage, and Any Other White Background subgroups; Black, containing Black Caribbean, Black African, and Any Other Black Background subgroups; and South Asian, containing Indian, Pakistani, and Bangladeshi subgroups.

Results

Educational Attainment

The school-wide data extracted from the DfES Report, "The London Challenge. Families of Schools" (2004) offered inconclusive evidence on the educational attainment of Bangladeshi and Pakistani pupils. For the regression relating percent ethnicity to GCSE attainment, the correlation coefficient and slope—an estimation of the regression coefficient $ß_1$—are collated in the table below. Additionally, the percentage of schools that reach or exceed the London average and contain at least 10% ethnic populations is listed. Schools with sizable Bangladeshi populations contained 73% of all Bangladeshi students, while schools with sizable Pakistani populations contained 56% of all Pakistani students.

Table 3

	Correlation (*r*)	**Slope ($ß_1$)**	**% Schools reaching or exceeding London average**
Bangladeshi	0.066	0.035	19%
Pakistani	-0.087	-0.18	50%

The data comparing percent ethnicity to GCSE attainment is inconclusive due to the small correlations and slopes. It is interesting that as the share of Pakistani pupils increases, the GCSE attainment seems to drop on average, though the small correlations make this assertion questionable. Looking at school-wide averages for schools with sizable ethnic populations, the vast majority of Bangladeshi-populated schools did not meet the city-wide average, while the median Pakistani school achieved at the London average. The difference between these groups is quite distinct. While the data does not reveal whether the particular subgroups examined achieved at the school average, it is indicative of the quality of schools that each student group attends, suggesting that Pakistani students attend better performing schools than Bangladeshi students. Nevertheless, the data is not conclusive on the performance of each ethnic subgroup on the GCSE exams.

Indian students have been shown to outperform other populations (Gayle, Berridge, & Davies, 2002), including Pakistani students within the same school (Abley, Jaffar, & Gent, 2004). This calls into question whether school-wide data for Pakistani students overestimates their achievement. As will be discussed later in this paper, schools with large Pakistani populations often have large Indian populations as well. It is likely that average school scores do overestimate Pakistani student performance. Therefore the higher quality of schools that Pakistani students seem to attend does not necessarily indicate academic success for Pakistani students.

Educational Improvement

Similar restrictions of data aggregation hamper our ability to determine the educational improvement of Bangladeshi and Pakistani students. The data relating educational improvement to percent ethnicity and the comparison of school averages to the London average are shown in the table below:

Table 4

	Correlation (r)	**Slope (β_1)**	**% Schools reaching or exceeding London average**
Bangladeshi	0.65	0.52	69%
Pakistani	0.42	0.25	50%

This data suggests that the majority of schools with sizable Bangladeshi students are progressing faster than the London average, while schools with sizable Pakistani populations are merely reaching the average. When comparing percent ethnicity to improvement, it appears that increasing the concentration of Bangladeshi students in a school has a positive effect on test scores that is twice as great as the effect of equivalent increases in the concentration of Pakistani students in a school.

To accurately determine the achievement and improvement of these subgroups, GCSE data disaggregated by ethnicity would have to be attained from London secondary schools. Nevertheless, some trends can be observed. Bangladeshi students in London attend on average lower-performing schools than Pakistani pupils, but these Bangladeshi-populated schools are improving faster than Pakistani-populated schools.

Though the educational attainment of students in largely Bangladeshi schools seems to be lower than nationwide data would suggest, the educational improvement trends are similar in nationwide statistics and this London-specific analysis.

The nationwide data leaves a question of whether Bangladeshi students in London are lagging behind their peers in other parts of England, though an interview with Kate Gavron, co-author of *The New East End: Kinship, Race, and Conflict*, suggests the opposite. She believes that schools in Tower Hamlets with large percentages of Bangladeshi students have found effective teaching strategies for the Bangladeshi population, and have been able to serve these students' needs better than schools outside of London where Bangladeshis constitute a smaller segment of the student body.

Overall, it is difficult to determine the differential academic achievement of Bangladeshi and Pakistani students due to low correlations and a lack of disaggregated data. One fact that appears to be consistent, however, is the faster rate of improvement of Bangladeshi students both nationally and in London itself.

Free School Meals

Poverty levels within London secondary schools were examined using the indicator of Free School Meals (FSM). With the London schools analyzed through the DfES data, trends similar to nationwide data were noticed in FSM eligibility. The correlation between the proportion of Bangladeshi students in a school with the percent of FSM-eligible pupils is much higher than for Pakistani students.

Table 5

	Correlation (r)	**Slope ($ß_1$)**
Bangladeshi	0.76	0.54
Pakistani	0.54	0.18

The coefficient ($ß_1$) for Bangladeshi students was 0.76, indicating that the higher the percentage of Bangladeshi students in a school is, the higher the poverty rates are likely to be. For Pakistani students this statement is still true but the relationship is much weaker.

Relating this back to educational attainment, the correlation between % FSM-eligible students and GCSE achievement was found to be -0.63 with a coefficient of -0.80, suggesting that without controlling for other factors, FSM eligibility explains 64% of variability in GCSE scores. This strong negative correlation supports the general finding that poverty hinders educational achievement. With such a strong negative correlation, one would expect that the Bangladeshi population, which faces high levels of poverty, would have a similarly negative correlation with GCSE attainment. As noted in the previous section, our analysis found a very slight positive correlation (0.066) between Bangladeshi proportions and GCSE attainment. At the very least, if this number

were treated as negligible, the effect of increased proportions of Bangladeshi pupils is better than the expected negative relationship one would predict.

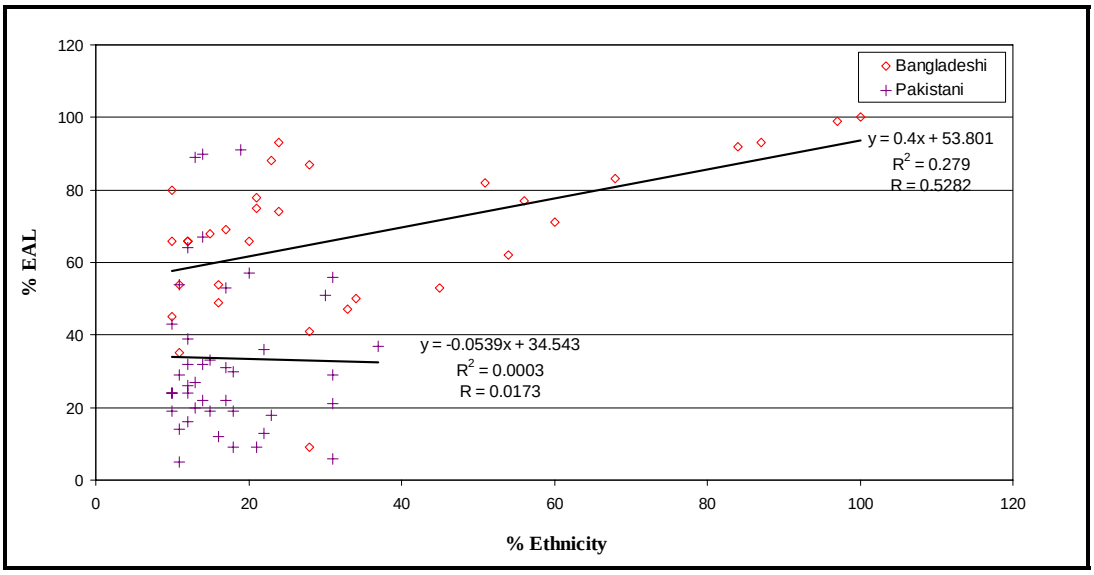
Since poverty levels have a negative correlation with educational achievement, one would expect two of the most disadvantaged ethnic groups, Bangladeshis and Pakistanis, to show low levels of achievement and improvement reflective of their relative levels of poverty. On the contrary, Bangladeshi students seem to be overcoming this hurdle by showing faster improvement than Pakistani students and indeed the overall London and national averages. While poverty may have contributed to the group's current low achievement levels, with only 19% of Bangladeshi-populated schools achieving at or above the London average and a national achievement gap of 2%, their rates of improvement are hopeful signs that this group is finding ways to succeed despite their disadvantages.

While the rates of poverty within the Pakistani community are sizable, they are still lower than that of the Bangladeshi community. This may provide Pakistani students with access to neighborhoods and schools with higher-performing students, but the nationwide data indicates that their achievement gap is higher than that of the Bangladeshi community, at 7%, and is showing no improvement.

English as an Additional Language

Another factor examined from the London school data is English proficiency. This is measured by the percentage of students whose first language is known or believed to be other than English, labeled "English as an Additional Language" (EAL). The data analyzed from this study shows a small but significant negative correlation between % EAL and GCSE attainment in London secondary schools. The coefficient was found to be -0.21 and the correlation was -0.23. We should therefore expect populations with higher proportions of EAL students to fare slightly worse than other populations. The graph relating % EAL to ethnicity for the analyzed schools is presented in *Figure 6*:

Figure 6. **Percentage of EAL versus Ethnicity**



The correlation between % Bangladeshi and % EAL is quite high at 0.528 with a coefficient of 0.40. The correlation between % Pakistani and % EAL is negligible at 0.017 with a coefficient of 0.054. As is apparent from the graph, the Pakistani schools are much more varied in composition with a large majority having EAL populations below 40%. Very few Bangladeshi schools have less than 40% EAL populations, suggesting that Bangladeshi students are exposed primarily to other students whose first language is not English, whereas Pakistani students are more integrated with native English speakers.

The only evidence that the Bangladeshi population is adversely affected by English proficiency levels relates to passing the core subjects of English and mathematics. National data indicates that within the group of students who achieve 5+ passing GCSE scores, only 65.5% of Bangladeshi pupils and 67.1% of Pakistani pupils pass these core subjects, compared to a 77.4% national average (DfES "Ethnicity and Education" 2006). However, this gap is not apparent in the London data analyzed for this report.

From this evidence, one would expect that Bangladeshi students would face a bigger handicap in attaining high GCSE scores. One would also expect that as the proportion of Bangladeshi students increases, the GCSE scores in English would drop. Instead, one finds no correlation, despite the analyzed range of percent Bangladeshi extending from 10% to 100%. That such extremely segregated schools with high EAL proportions are not disadvantaged on the English test is an extremely surprising finding. One factor that may ameliorate the handicap of English language acquisition is extra funding provided to schools with EAL students through Section 11 of the 1966 Local Government Act.

Schools with large Bangladeshi populations may have found optimal methods of addressing student needs using these additional funds that compensate for the students' low incoming levels of English proficiency.

Segregation

To determine the levels of segregation within London secondary schools, dissimilarity and isolation indexes were calculated as outlined in the Methods section of this paper. From this data, it is apparent that Bangladeshi students are extremely unevenly distributed and isolated from their peers. Exceeded only by Travelers of Irish Heritage and Gypsy/Roma populations, which both account for very small segments of the population, Bangladeshis were the most unevenly distributed population within London, with a dissimilarity index of 0.721, and the only group categorized according to Massey and Denton (1988) as being "highly segregated." After white students, Bangladeshi pupils were the most isolated, with the least amount of contact with other ethnicities. Pakistani students were moderately segregated, with a dissimilarity index of 0.58, but faced much lower levels of isolation than Bangladeshi students. A summary of key ethnic groups is displayed below, with the dissimilarity and isolation indices of Pakistani and Bangladeshi students in bold:

Table 6.
Dissimilarity and Isolation Indices by Ethnicity

	D	I
White British	0.47	0.60
Irish	0.61	0.07
Indian	0.59	0.27
Pakistani	**0.58**	**0.13**
Bangladeshi	**0.72**	**0.41**
Black Caribbean	0.44	0.15
Black African	0.41	0.16
All White	0.46	0.65
All Black	0.43	0.31
All South Asian	0.58	0.41

As seen through these dissimilarity indexes, Bangladeshi students attend much more segregated schools than Pakistani students. According to the DfES report "Families of Schools" (2004), nine London secondary schools, all in Tower Hamlets with the exception of one school in Camden, have Bangladeshi populations in excess of 50%. One of these schools, Tower Hamlet's Stepney Green School, is fully Bangladeshi. No London schools have Pakistani populations greater than 37%. Therefore Pakistani students encounter much larger numbers of students from other backgrounds.

The question remains as to which ethnicities these students are mixed with. To determine this, pairwise dissimilarity indexes were calculated that measure levels of segregation between specific communities. If the pairwise dissimilarity indexes are high, then schools with an overrepresented proportion of one ethnicity have an underrepresented proportion of the other, demonstrating high levels of segregation between the two groups.

While both populations are segregated from every other ethnic group, two striking facts can be gleaned from this data. The first is that Bangladeshi students are more segregated from every ethnic group, including White students, than Pakistani students. The second surprising finding is that Pakistani students are moderately integrated with Indians, Black Caribbeans, and Black Africans; in fact they are more integrated with these groups than with Bangladeshi students. The integration between Indian and Pakistani students is incredibly high compared to other ethnicity pairs, at 0.39. This is closer to the cutoff for "low segregation" than any other pairwise dissimilarity index for either of these groups, other than "Asian" which can be dismissed since Pakistanis and Bangladeshis are components of this category.

Table 7. **Pairwise Dissimilarity Indices for Bangladeshi and Pakistani Students**

	Bangladeshi	Pakistani
Pakistani	0.70	
Indian	0.76	0.39
Black Caribbean	0.71	0.60
Black African	0.67	0.60
Other Black	0.75	0.65
Chinese	0.74	0.69
Other Ethnicity	0.70	0.61
Irish	0.85	0.81
Asian	0.54	0.31
Black	0.68	0.59
White	0.78	0.68
Average	0.72	0.60

	= low levels of unequal distribution
	= moderate levels of unequal distribution
	= high levels of unequal distribution

In the entire pairwise dissimilarity analysis between major ethnic groups, included in Appendix C, only Black Africans and Black Caribbeans show low levels of segregation at 0.27, which is still close to the 0.30 cutoff for moderate segregation. London schools therefore demonstrate high levels of ethnic

segregation overall, but Bangladeshi students are the most segregated and isolated of all ethnicities.

As Tower Hamlets schools have become more segregated, isolating the Bangladeshi pupils from other ethnic groups, the Bangladeshi achievement levels have been increasing. This finding contradicts numerous studies in the US that tie segregation to low levels of educational achievement (Lee, 2004). One explanation, related to Gavron's (2006) hypothesis, is that a highly concentrated Bangladeshi population allows schools to adapt to the needs of the community. Since Pakistani students are integrated with students from other ethnic groups, these groups may have different needs that schools may find difficult to address simultaneously.

No literature was found that investigates the effects of multiple minority groups on educational achievement. Within the limits of this study, no definitive causal answer can be drawn that explains the stagnant test scores of Pakistani students and the contradictory improvements of Bangladeshi students when such a multitude of factors including poverty, EAL status, and segregation should predict the opposite effect. However, the multiple minority group effect is an interesting hypothesis that necessitates and deserves further study.

Conclusions

From all indicators available in this research, we have found that the educational attainment of Bangladeshi students is comparable to that of Pakistani students in London secondary schools, though the former group is improving at a faster rate. In addition, the Bangladeshi students in Tower Hamlets are performing better and improving faster than the native White population of this borough.

Looking at indicators of poverty and low English proficiency, both of which are related to low educational attainment, Bangladeshi students are at a greater risk of performing at lower levels, yet are able to surmount these obstacles to achieve and improve at a level equivalent to or above that of Pakistani students. Even with higher proportions of students under the category of English as an Additional Language, schools with large Bangladeshi populations do not show a disadvantage in performance on the English GCSE test. Therefore we can eliminate poverty and English proficiency from our list of possible explanations for the differences in educational trends.

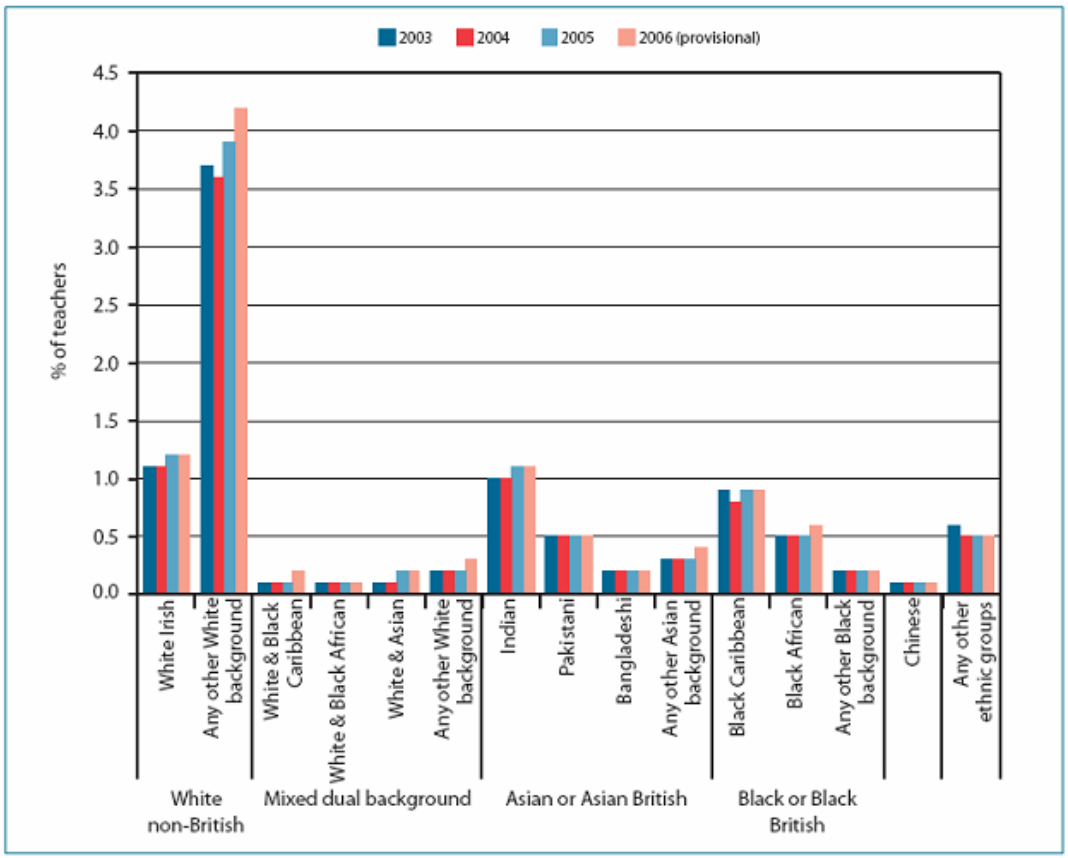
Another explanation for differential rates of educational improvement between these two communities is the degree to which these communities are represented on the political level and how responsive schools are to the needs of these communities.

Ethnic Background of Teachers

The ethnic composition of teachers in schools of Tower Hamlets in comparison to schools in Newham, Redbridge, and Waltham Forest may be another important factor to explain why Bangladeshi students are improving faster than Pakistani students. Ethnic minority teachers can play an important role in the educational performance of a child from the same ethnic group (Wilson, Burgess, & Briggs, 2006), often acting as a role model of educational success. This is especially true for young people from low-income neighborhoods where a substantial number of the population may be either unemployed or in unskilled professions. Ethnic minority teachers are often more responsive to the needs of children and may be able to help overcome the language barriers that children from minority groups face in English-language schools. Furthermore, these teachers can often act as a bridge between the school and the parents. Parents who may experience language difficulties might be more confident to express themselves with teachers who are able to converse in their mother tongue.

In general, teachers from minority communities are under-represented in London's schools. Although London has 40% of all minority teachers in the UK, giving it the highest proportion of minority teachers, it also has the largest gap between the proportion of minority students and the proportion of minority teachers at 37% (Department of Education 2006). Pakistani and Bangladeshi teachers only make up a small percentage of minority teachers, and there has not been any significant increase in their numbers between the years 2003 and 2006. In comparative terms, the percentage of Pakistani teachers in London is double that of Bangladeshis.

Figure 7. **Percentage of teachers from minority ethnic groups 2003-2006 (provisional)**



Source: Department for Education and Skills, 2006; p. 102

Information is not available on whether the Pakistani and Bangladeshi teachers are in areas with high proportions of pupils of the same ethnicity. Given the small percentage of Bangladeshi and Pakistani teachers and the lack of information on their distribution, we cannot consider ethnic composition of teachers as a sufficient explanation as to why Bangladeshi students are improving faster than Pakistani students.

One change that may improve minority student achievement is to increase the number of teachers from similar ethnic backgrounds. Focusing efforts on recruiting teachers who represent the student populations may help by creating positive role models, understanding student needs better, and increasing communication with and involvement of parents.

Ethnic Composition of Local Borough Councils

One of the ways that ethnic minority groups in London can exercise a right to their education is to have community members elected to the council in local borough elections, which take place every four years. Councilors become responsible for the strategic planning and delivery of services such as education, housing, social services, and leisure services. Councilors sit on the board of the Local Education Authority and are responsible for the effective governance of all state-maintained primary and secondary schools in the borough. According to the report produced by the Department for Education and Skills (2000), the Local Education Authority determines the supply of school places in given areas; makes sure that every child has access to a suitable school place; intervenes in failing schools; evaluates and monitors schools; and makes decisions in consultation with schools about the distribution of the school budget.

When examining the ethnic composition of councils in the local borough of Tower Hamlets and the three boroughs with a high concentration of Pakistanis, Newham, Redbridge, and Waltham Forest, it is apparent that the Bangladeshi community forms a more powerful ethnic bloc on the council.

Table 8. **Ethnic Composition of Councils**

	Tower Hamlets %	Newham %	Redbridge %	Waltham Forest %
White	37	53	76	69
Pakistani	_	17	8	22
Bangladeshi	61	_	_	_
All other Asians	0	15	16	2
Black	2	15	0	7

Bangladeshis form a majority of councilors in Tower Hamlets, outnumbering the indigenous White councilors, whereas, the councils of Newham, Redbridge, and Waltham Forest are divided between the ethnic minority groups, with the indigenous White population forming the majority in all three of the boroughs. Although we do not believe that each councilor's political interest is dictated by their ethnic affiliation, we feel that the existence of a majority of Bangladeshi councilors is significant. Bangladeshi councilors are in a position to understand and respond appropriately to the challenges that the community faces; they may be able to exercise political pressure and demand significant resources and capital for schools in Tower Hamlets much more easily than Pakistani councilors who do not have the same political weight. The successful political mobilization of the Bangladeshi community may explain the

faster rates of educational improvement amongst young Bangladeshis in comparison to the Pakistani community.

Multiple Minority Effects

One area that requires more research is the effect of segregation on the educational achievement of these communities. We found that Bangladeshi students are more isolated from every ethnic group than any other population yet they do not seem to be harmed by this segregation, while Pakistani communities are slightly integrated with Indian and Black communities yet show no advantage from this mixing. One explanation for the effects of segregation on these groups is the possibility of detrimental effects from having multiple minority groups clustered within one school. Teaching multiple minority groups requires schools to meet the diverse needs of several communities simultaneously, with multiple language barriers and different cultural norms that must be learned to make student learning and communication to parents more effective. Schools may also face racial tensions between ethnic groups. Schools teaching multiple minority groups face these challenges in addition to meeting the needs of various generations of immigrants. To our knowledge, the multiple minority effect has not been examined to date. Given the influx of immigrants to the UK and US from all over the world, this area of exploration has vast opportunities for further research and demands such research to ensure that minority groups are adequately served by schools.

It would be useful to investigate the distribution of resources and ethnic minority teachers to understand how well schools are assessing and responding to the needs of various student populations. In addition, the degree and nature of interactions within and between ethnic groups should be observed in schools with large Bangladeshi and Pakistani communities. Another dynamic worth exploring further is the power structures between students of various ethnic groups within a school. This information may shed light on how community-building within schools can be used to empower these groups.

Power is also significant on a community-wide level. In Tower Hamlets, which has a high concentration of Bangladeshi students in schools, Bangladeshis constitute the majority of councilors in the Local Educational Authority. In Newham, Redbridge, and Waltham Forest, which have high concentrations of Pakistani students, the majority of councilors are White, with the remainder divided by various ethnic minority groups. The power the Bangladeshi community has exercised within the Tower Hamlets school system could be due to its large representation in the school population, and may explain the relative academic strength of Bangladeshi students in schools since these schools can be more responsive to the needs of the community. In boroughs with large Pakistani populations, the community has not been able to have a strong voice in the

schools, which may reflect the multiple minority penalty, and therefore has been able to exert little political pressure in directing resources towards Pakistani students. Political mobilization may therefore be a strong force in improving education for specific ethnic communities.

Looking at the upward trend of the Bangladeshi community brings hope for the future. The factors we believe have helped this community include political mobilization and school responsiveness to the students' distinct needs. These factors should be investigated as possibilities for improving Pakistani student achievement for the current group of students and future generations. The success of the current generation will reduce barriers for future generations of Bangladeshi and Pakistani youth. If a significant number of role models are visible, these children will also have more hope and confidence in their ability to prosper.

These two populations are currently vulnerable to generational poverty and radicalism. Only by helping schools push these students to succeed by responding properly to their needs will the youth feel a sense of belonging and become a positive force in the greater London community.

Acknowledgements

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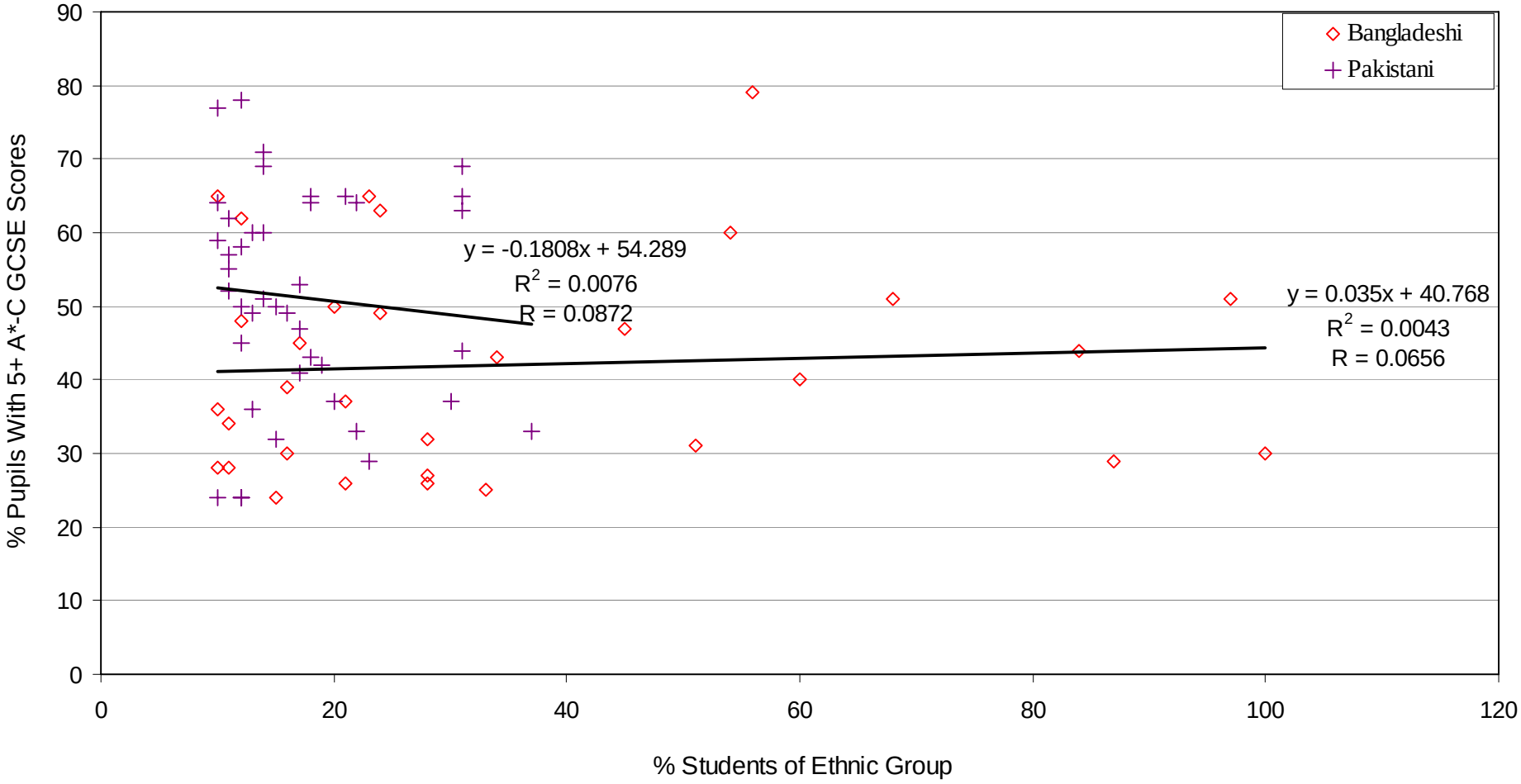
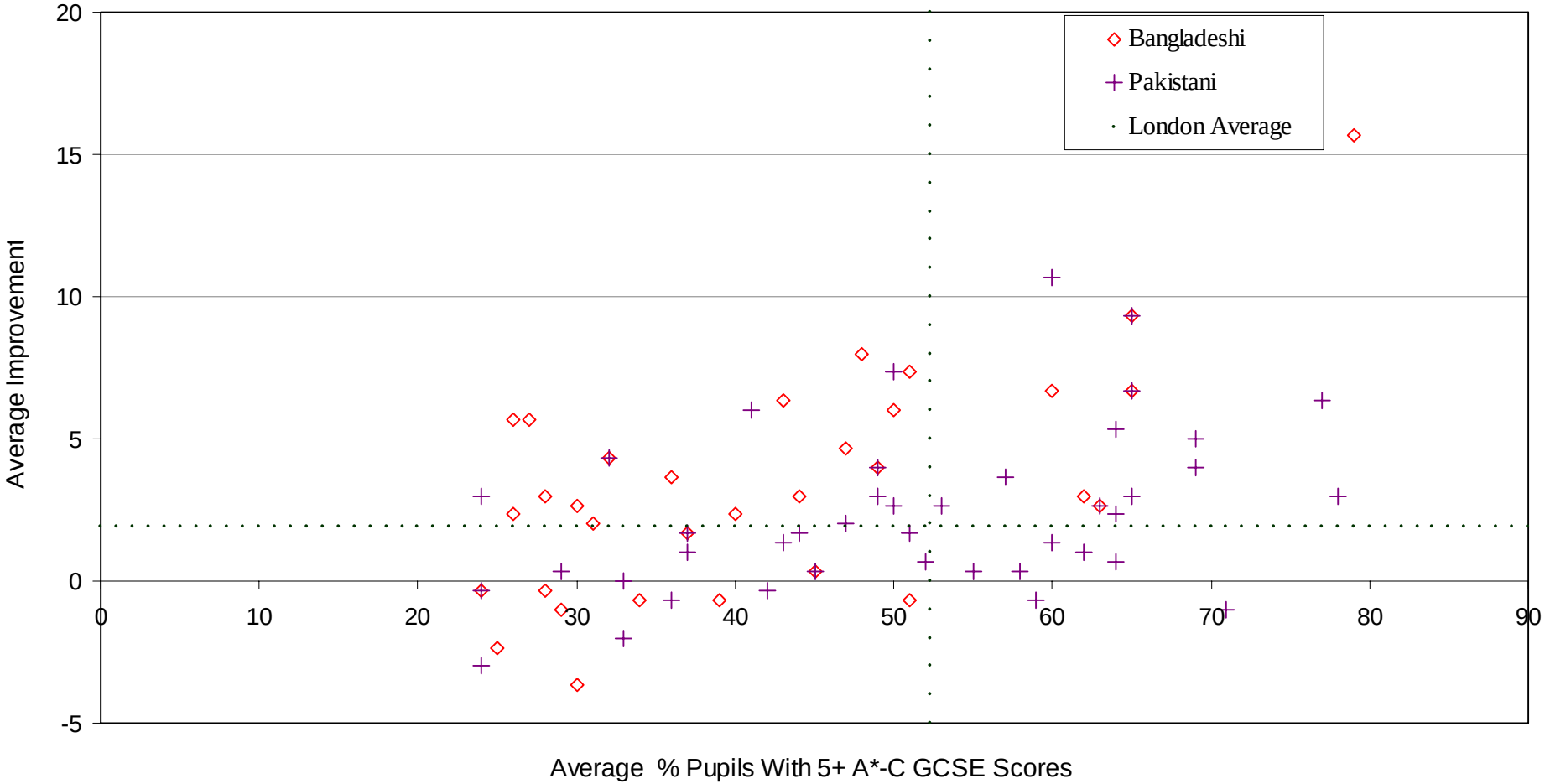
Appendix A: GCSE Attainment and Improvement versus Ethnicity

Appendix A – 1: GCSE Attainment vs. Ethnicity

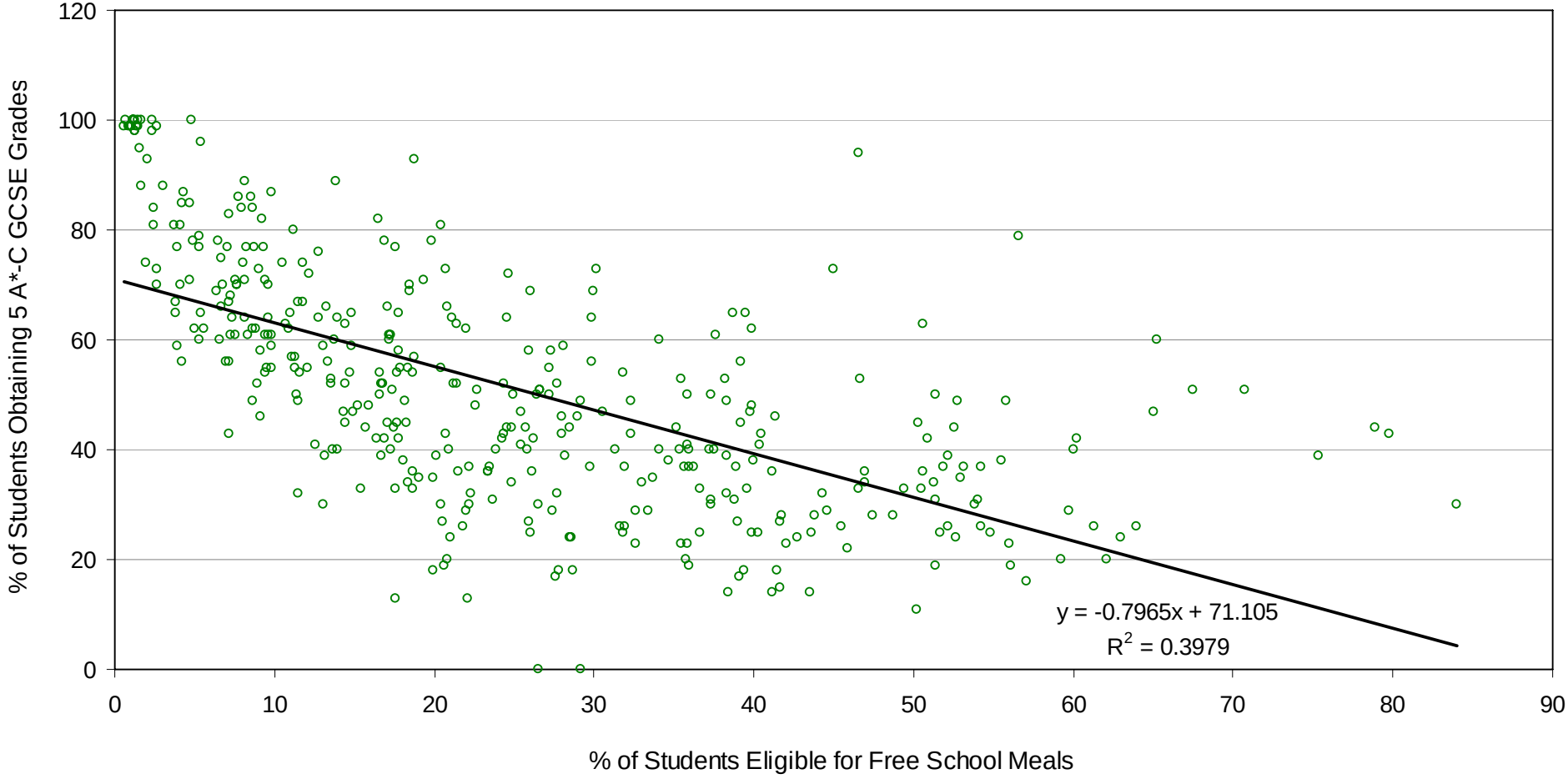


Appendix A - 2: GCSE Attainment and Improvement vs. Ethnicity

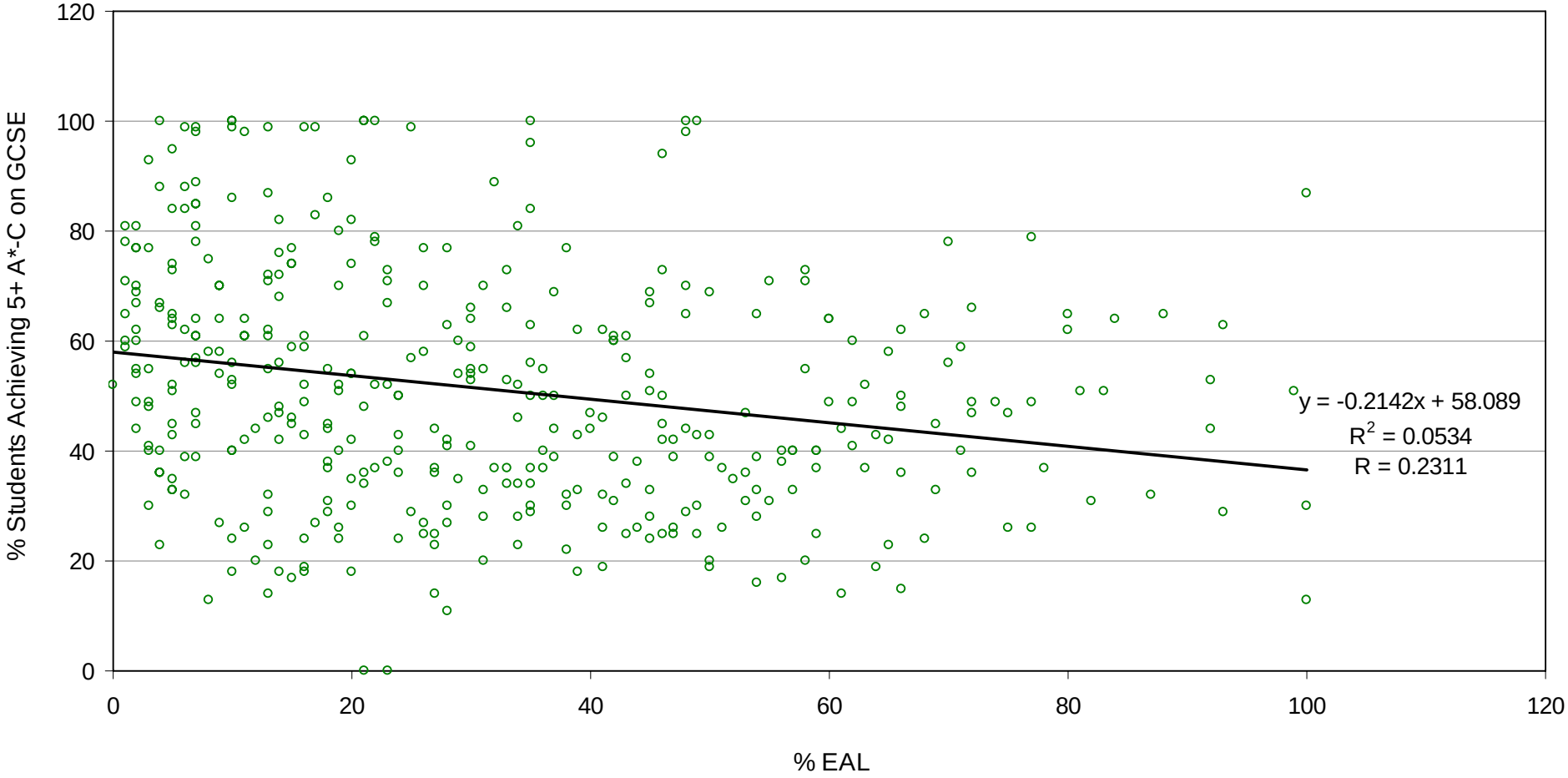


Appendix B: GCSE Attainment versus %FSM and %EAL

Appendix B – 1: GCSE Attainment vs. % FSM



Appendix B – 2: GCSE Attainment vs. % EAL



Appendix C: Pairwise Dissimilarity Index

Appendix C: Pairwise Dissimilarity Index

	Bangladeshi	Pakistani	Indian	Black Caribbean	Black African	Other Black	Chinese	Other Ethnicity	Irish	Asian	Black	White
Pakistani	0.697											
Indian	0.763	0.386							= low levels of unequal distribution			
Black Caribbean	0.708	0.599	0.637						= moderate levels of unequal distribution			
Black African	0.668	0.596	0.627	0.272					= high levels of unequal distribution			
Other Black	0.748	0.650	0.693	0.355	0.400				(extent to which schools that are overrepresented in one population are underrepresented in the other)			
Chinese	0.735	0.685	0.630	0.569	0.546	0.573						
Other Ethnicity	0.702	0.611	0.602	0.456	0.400	0.515	0.562					
Irish	0.850	0.809	0.788	0.635	0.585	0.658	0.722	0.640				
Asian	0.535	0.311	0.268	0.582	0.555	0.631	0.604	0.577	0.773			
Black	0.681	0.588	0.624	0.150	0.133	0.319	0.535	0.405	0.594	0.552		
White	0.776	0.684	0.643	0.576	0.553	0.546	0.514	0.551	0.648	0.640	0.537	
Average	**0.715**	**0.601**	**0.606**	**0.503**	**0.541**	**0.553**	**0.607**	**0.547**	**0.700**	**0.548**	**0.465**	**0.61**

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