PUPILS OF AFRICAN HERITAGE, MATHEMATICS EDUCATION AND SOCIAL JUSTICE

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Abstract

This article focuses on pupils of African heritage in learning mathematics in the midst of the debate on race and inequality in educational provision. It discusses the widespread notions about the challenging nature of mathematics as a subject to learn and the persistent underachievement of pupils of African heritage within the context of the classroom in England. It highlights some of the distinguishing factors at the root of the perceptions pupils of African heritage have of themselves and their implications for learning mathematics. The article argues that highlighting the contributions made by people of African heritage to mathematical knowledge may offer an opportunity for pupils of African heritage to engage with the subject. Furthermore, genuine desire and care for how they are supported is vital if their underachievement in mathematics learning is to be addressed.

Keywords: care; progression; race; underachievement

Introduction

The underachievement of pupils of African heritage in compulsory education in England has received wide coverage in recent years (Richardson, 2005; London Development Agency (LDA), 2004; Figueroa, 2001; Gillborn and Mirza, 2000; Gillborn and Youdell, 2000; Gillborn and Gipps, 1996). While these researches highlight the general lack of educational advancement of pupils of African heritage, the need to draw special attention to their accomplishment in learning mathematics is essential.

The importance of mathematics in everyday life is reflected in the high status of the subject in the school curriculum. In England for example, the significant role of mathematics in the life of the individual and that of the community and its economic advancement has been emphasised and sustained in various reports over many decades. For example, Cockcroft (1982) was unambiguous in stressing the need for individuals to learn mathematics as follows:

> It would be very difficult – perhaps impossible – to live a normal life in very many parts of the world in the twentieth century without making use of mathematics of some kind. This fact in itself could be

> thought to provide a sufficient reason for teaching mathematics, and in one sense this is undoubtedly true. (p.1)

The significance of mathematics in the life of the individual as observed by Cockcroft continues to be highlighted in reports on the teaching and learning of mathematics. The most current report compiled by Smith (2004) supported the view that:

> The acquisition of at least basic mathematical skills – commonly referred to as "numeracy" – is vital to the life opportunities and achievements of individual citizens. Research shows that problems with basic skills have a continuing adverse effect on people's lives and that problems with numeracy lead to the greatest disadvantages for the individual in the labour market and in terms of general social exclusion. Individuals with limited basic mathematical skills are less likely to be employed, and if they are employed are less likely to have been promoted or to have received further training. (p.13)

Evidently, the attainment of mathematical proficiency is generally understood to be particularly vital if all British pupils including those of African heritage are to acquire the necessary basic skills for their future participation in society as responsible citizens. In view of the importance of mathematics in the lives of individuals, the need for genuine search to support the progress of pupils of African heritage in learning mathematics is of vital importance.

In this article, I will refer to Black pupils (that is, pupils of African, African-European, African-Caribbean, African-American or African-other) whenever possible as pupils of African heritage. This is a deliberate strategy for two reasons firstly, to limit my references to merely visible characteristics as the standard form of representation and secondly, to emphasize their commonly shared heritage. The reference to visible characteristics as the most common way to identify persons of African heritage contributes to some of the difficulties in focusing on issues relating to them (London Development Agency (LDA), 2004; Tickly et al, 2004). While it is important to acknowledge the cultural diversity and changing identities among people of African heritage (Appiah, 2005; Tickly et al, 2004; Tizard and Phoenix, 1993; Anim-Addo,1995), widely respected scholars of African heritage (Diop, 1989, 1978; Asante,1990) have emphasized the existence of traditional African-centred worldviews that form the basis for some of the distinguishing cultural characteristics and beliefs unifying people of African heritage. Graham (2001) argues that some of these cultural characteristics have survived the physical uprooting of African people through enslavement to remain a necessary part of their ethos, regardless of their geographical location. I will leave the above issues to one side for now and turn to the general experiences of pupils of African heritage in compulsory education in England as a prelude to the main focus of the discussion.

School experiences of pupils of African heritage

The concern about the general academic underachievement of pupils of African heritage was clearly and forcefully expressed over three decades ago by Bernard Coard that:

> The Black child acquires two fundamental attitudes or beliefs as a result of his experiencing the British school system: a low self-image, and consequently low self-expectations in life. These are obtained through streaming, banding, bussing, ESN schools, racists news media, and a white middle-class curriculum; by totally ignoring the Black child's language, history, culture, identity. Through the choice of teaching materials, the society emphasizes who and what it thinks is important – and by implication, by omission, who and what it thinks is unimportant, infinitesimal, and irrelevant. (Coard, 1971, p.31)

Although considerable changes have occurred since the 1970s much remains the same in terms of their academic underachievement. In the preface to Brian Richardson's (2005) *Tell it like it is: How our schools fail Black children*, Herman Ouseley commented that the problems observed by Coard decades earlier have fundamentally remained the same. He noted that:

> Bernard Coard's work has withstood the test of time because the problems facing the African-Caribbean parents and their children have fundamentally remained the same. Racism, race prejudice and social inequalities are crucial factors in the perpetuation of educational practices which cause the system to fail the African-Caribbean communities. (Ouseley, 2005, p.13)

Similarly, research by the Department for Education and Skills (DfES, 2005) recently concluded that boys of African heritage are twice as likely to have been categorised at school as having behavioural, emotional or social difficulty as their White English counterparts.

A number of researches have consistently identified key issues such as pupils' relationship with their teachers underpinning what has been acknowledged as the academic underachievement of pupils of African heritage at all Key Stages (LDA, 2004). For example, Gillborn's (1990) two-year study examining teacher-pupil interactions highlighted the negative experiences of African-Caribbean pupils in the form of high teacher expectations for bad behaviour, creating the conditions for them to receive more punishment than their White English or Asian counterparts. Similar research carried out by Sewell (1997) on how boys of African heritage survive schooling observed that a significant number of them are specifically subjected to negative labelling and stereotyping, and as a result are experiencing racism and sexism to a high degree in schools compared to their counterparts of non-African background. Similarly, Wright et al (2000) have highlighted experiences of racism perceived by some pupils of African heritage from some of their teachers of non-African heritage.

The overall effect for many pupils of African heritage was that, in spite of the fact that most start their primary education viewing school as a positive and enjoyable place for learning and adventure, their focus on learning decreased the longer they stayed in the schooling system (LDA, 2004). Secondary school aged boys in particular felt that they do not belong in their mainstream school due to the perception that their teachers generally ignored them which often left them frustrated and angry. Such lack of participation in school activities is often at the

core of the misunderstandings between pupils and teachers which, in many cases, lead to exclusions from school (Majors et al, 2001; Wright et al, 2000).

Focusing on Local Education Authorities' (LEA) and schools' responses to the requirements of the Race Relations (Amendment) Act 2000 (RRAA) concerning their exclusion practices, Parsons et al (2004) concluded that a number of schools were judged to be making progress in implementing comprehensively the RRAA in relation to minority ethnic exclusions. However, while the disproportionality in rates of permanent exclusion for pupils of African heritage has fallen considerably over a number of years they are still excluded at about three times the rate of pupils of non-African heritage with devastating consequences for their attainment and participation.

Attainment in mathematics learning

The failure of pupils of African heritage to share in the dramatic rise in attainment at the General Certificate of Secondary Education (GCSE) examinations which occurred in the 1990s for their White English peers prompted an investigation (Gillborn and Mirza, 2000) which demonstrated how underachievement of pupils of African heritage becomes institutionalized through the tiering[1] system.

> Black pupils were significantly less likely to be placed in the higher tier, but more likely to be entered in the lowest tier. This situation was most pronounced in mathematics where a *majority* of Black pupils were entered for the Foundation Tier, where a higher grade pass (of C or above) is not available to candidates regardless of how well they perform in the exam. (Gillborn and Mirza, 2000, p.17)

Since the publication of this report, comprehensive evidence on minority ethnic pupils in compulsory education is now available (DfES, 2005; DfES, 2006). The growing evidence establishes the lack of progress of pupils of African heritage, substantiating earlier findings (LDA, 2004; Gillborn and Mirza, 2000; Gillborn and Youdell, 2000).

Focusing specifically on mathematical attainment, pupils of African heritage consistently scored the lowest levels throughout the Key Stages[2] as indicated in Table 1.

ETHNIC GROUP	KEY STAGE 1: % EXPECTED LEVEL			KEY STAGE 2: % EXPECTED LEVEL			KEY STAGE 3: % EXPECTED LEVEL			KEY STAGE 4: % EXPECTED LEVEL
	Reading	Writing	Maths	English	Maths	Science	English	Maths	Science	5+ A *-C GCSEs
White	**85**	**82**	**91**	**76**	**73**	**87**	**70**	**72**	**70**	**51**
White 8ritish	85	82	91	76	73	88	70	72	70	5l
Irish	84	81	91	82	78	90	75	75	73	60
Traveller of Irish Heritage	28	28	52	23	19	36	49	49	45	42
Gypsy/Roma	42	38	60	30	27	48	33	35	35	23
Any other White background	80	78	89	74	72	84	66	70	65	52
Mixed	**85**	**82**	**91**	**77**	**72**	**87**	**69**	**69**	**67**	**49**
White and Black Caribbean	83	79	90	73	67	85	62	62	60	40
White and Black African	86	83	90	77	72	8S	69	68	68	48
White and Asian	88	85	93	81	78	89	78	78	76	65
Any other mixed background	85	82	91	79	75	88	71	71	68	52
Asian	**80**	**78**	**86**	**69**	**67**	**79**	**66**	**66**	**59**	**53**
Indian	88	86	92	79	77	87	77	79	72	65
Pakistani	76	73	83	61	58	72	S7	55	47	42
Bangladeshi	75	73	83	68	63	77	58	57	48	46
Any other Asian background	82	80	89	73	74	82	70	7S	69	59
Black	**78**	**74**	**84**	**68**	**60**	**77**	**56**	**54**	**51**	**36**
Black Caribbean	79	74	84	68	59	78	56	53	51	33
Black African	77	73	83	67	62	75	56	55	50	41
Any other Black background	79	75	86	71	62	79	58	55	54	34
Chinese	**90**	**88**	**96**	**82**	**88**	**90**	**80**	**90**	**82**	**75**
Any other ethnic group	**74**	**71**	**85**	**63**	**67**	**75**	**59**	**64**	**58**	**46**
Unclassified	76	73	85	69	66	83	63	67	6S	47
All pupils	**84**	**81**	**90**	**75**	**72**	**86**	**69**	**71**	**68**	**51**

Table1: Percentage of pupils achieving the expected level at each Key Stage by Ethnic Group (DfES, 2005)

The results highlight the attainment at Key Stage 1 for Black pupils was 84% compared to 91% for White pupils, 86% for Asian pupils and 96% for Chinese pupils. At Key Stage 2, their attainment fell to 60% compared to 73% for White pupils, 67% for Asian pupils and 88% for Chinese pupils. A Further fall to 54% in their attainment was recorded at Key Stage 3 as compared to 72% for White pupils, 66% for Asian pupils and 90% for Chinese pupils. At Key Stage 4 only 36% of Black pupils achieved five or more passes at the end of their General Certificate of School Examinations compared to 51% for White pupils, 53% for Asian pupils and 75% for Chinese pupils.

It is not clear to what extent pupils' ethnic classification affected the conclusions drawn by the research. For example pupils of mixed parentage were classified as: 1) White and Black Caribbean, 2) White and Black African, 3) White and Asian and 4) Any other mixed background. Whilst pupils with one Black parent were subdivided into two groups, there was no explanation for the non-representation of pupils with one Chinese parent if any, raising the question whether they are accounted for as any other mixed background or as unclassified. The potential issues associated with the assumptions underpinning the classification of minority ethnic pupils in the research require further scrutiny which is beyond the immediate concern of this article.

Nevertheless, the results of the research underline the seriousness of the underachievement of pupils of African heritage in learning mathematics. A

similar result from America (Tate, 1997) also concluded that the mathematics achievement gap is slowly closing between white students and students of colour; however African-American students continue to perform at significantly lower levels than White students. Ginsberg et al (1997) studying pre-school mathematical knowledge of children from several countries across different cultures found that most children including African-Americans demonstrate reasonable competence in informal mathematical thinking. However, while most children from other ethnic backgrounds go on to succeed at school African-American children in particular do not, even though their pre-school performances are similar to other successful groups. Research has shown (Osborne, 2001) that for members of groups for whom there are negative group stereotypes concerning the intellectual ability of the group, intense aversion is generated by schooling and the school environment long before the manifestation of the achievement gap.

The lack of success and progress of pupils of African heritage may be understood as the result of various factors interacting in very complex ways. For example, pupils' views about schooling, their rapport with their mathematics teachers, delivery of the subject matter, peer pressures, poverty, lack of family support all present serious potential sources for underachievement. While all these factors cannot be explored in this article, attention will be drawn to some of them and their impact on teaching and learning the subject. The general level of accomplishment of pupils of African heritage in learning mathematics raises difficult questions that demand honest answers. Is it simply the case that pupils of African heritage lack serious mathematical aptitude, or is the subject taught in ways that encourage them to fail?

If it is the case that pupils of African heritage do indeed lack significant mathematical aptitude, then, one possible way to explain this situation would be in terms of innate deficiency in intellectual aptitude of people of African heritage, as presented by Herrnstein and Murray (1994) in their book, *The bell curve: intelligence and class structure in American life*. This view however, is forcefully contested. Cheikh Anta Diop (1991), a nuclear physicist, argued in his book *Civilization or Barbarism: An Authentic Anthropology* that the abundant contribution of people of African heritage to our present understanding of mathematics cannot be ignored. Diop illustrated how particular notions of mathematical reasoning as expressed in geometry and arithmetic for example, essentially have their origins in the ancient cultures of Africa. Diop (1989, 1974) does this by employing rigorous scientific methodology to explore the commonly shared ancestry and cultural practices of the ancient Pharaonic Egyptians and present –day Africans. Using Ancient Egyptian hieroglyphic and hieratic texts, Diop (1991) provided numerous mathematical problems and their solutions to point out the high level of sophistication of Egyptian mathematics detailing its pervasive and enduring influence on Greek thought.

According to Gillings (1972) it is not uncommon in histories of mathematics to read that Egyptian mathematics (particularly their multiplication) was clumsy and awkward due mainly to their very poor arithmetical notation. In spite of such criticisms, Gillings noted the deep influence of Egyptian

mathematical techniques throughout the Coptic and Greek periods and over a thousand years later in the Byzantine period. For Gillings the profound influence of Egyptian mathematics is obvious:

> How far have we progressed in multiplication since the times of the ancient Egyptians, or even Greek and Roman times? What are our grounds for being so critical of Egyptian multiplication, in which it was only necessary to use the twice-times tables? In English-speaking countries, at least, as late as the sixteenth century, it was not part of the school curriculum to learn any multiplication tables at all. (Gillings, 1971, pp16-17)

Bernal (1987) provides a response to Gillings's questions by noting that, by the 1680s there was widespread opinion that Africans were merely sub-humans with negligible intellectual qualities. Bernal argues that this perception of Africans led to the vilification of Ancient Egyptians:

> If it had been scientifically 'proved' that Blacks were biologically incapable of civilization, how could one explain Ancient Egypt – which was inconveniently placed on the African continent? There were two, or rather, three solutions. The first was to deny that the Ancient Egyptians were black; the second was to deny that the Ancient Egyptians had created a 'true' civilization; the third was to make doubly sure by denying both. The last has been preferred by most 19th- and 20th-century historians. (Bernal, 1987, p241)

If we accept Diop's (1991, 1989, 1987,1978,1974) thesis concerning the African origin of Ancient Egyptian civilisation, which he invites us to scrutinise, then this raises questions concerning the African contribution to mathematical knowledge and how we currently understand the origins of European mathematics. Genuine consideration of how best these issues can be addressed in the mathematics curriculum may well provide a basis, not only for positively supporting pupils of African heritage to view mathematics as part of their own heritage and engage with it, but may also lead to deeper appreciation of the subject for all learners. This brings us to the second part of the question posed earlier concerning the teaching of the subject in ways that disadvantage pupils of African heritage.

In our schools at present the LDA (2004) reported how a significant number of pupils of African heritage go through largely negative school experience as a result of the general antagonistic element in their managment. The care and attention they experienced, the quality of communication and levels of conflict were all less positive. Furthermore, the lack of high teacher expectations is a major factor in the underachievement of pupils of African heritage at school, resulting in less than adequate opportunities for them to engage with studying mathematics at a higher level:

> In particular, there is a striking association between ethnic origin and pupils chances of entry to the Higher tier. White pupils are four times more likely to be entered in the higher tier than their Black peers, meaning that African Caribbeans are almost completely absent from Higher tier mathematics… (Gillborn and Youdell, 2000, p.120)

Consequently, the combination of low teacher expectations and the lack of opportunities for pupils of African heritage to fully engage with learning mathematics create ideal conditions for their underachievement in the subject. Recent evidence (DfES, 2006) gathered from the African-Caribbean achievement

project involving 30 schools indicated that in spite of the success of the project in raising some awareness of African-Caribbean issues in schools, some teachers remain reluctant to fully commit to focusing on the needs of African-Caribbean pupils. Given this state of affairs, providing the right incentive as part of the entitlement for pupils to successfully learn at school is a challenge that must be confronted, if all British pupils regardless of their heritage are to be fully supported.

The challenge for schools and teachers

We can assume that the crucial role of schools and mathematics teachers in supporting and guiding their pupils to learn is beyond dispute. The issue, however, is how they support all their pupils to progress in learning mathematics. Teachers are not isolated from the society within which they live and work and as such share in the values of their profession as well as the wider community. Gates comments that:

> As a teacher of mathematics, one holds certain values and one articulates values through the forms of classroom organisation and the nature of interactions we have. In other words we hold implicit and explicit values and these explicit values might convey a set of implicit values or 'worth' which may even be contrary to those which we hold. Some values may be deeply embedded in the acceptable practices of a school. Such values would impinge also on the values we held to be important in and through the study of mathematics – and we give out these messages all the time. (Gates, 2002, p.213)

One of the fundamental messages that teachers give out all the time is embedded in how they approach the teaching and communicating of the subject. Mathematics is often characterised as a subject that one can or cannot do (Gates, 2002). This view of the subject is sustained and reinforced by the authoritarian and divisive way in which pupils are often grouped in their lessons according to their mathematical abilities, thus making implicit assumptions about the quality of their reasoning. Walkerdine puts it this way:

> Success at Mathematics is taken to be an indication of success at reasoning. Mathematics is seen as *development* of the reasoned and logical mind. (Walkerdine, 1989, p25)

Considering the fact that pupils of African heritage are particularly underachieving in mathematics learning, does this not make it difficult for some teachers to maintain low expectations and negative outcomes for pupils of African heritage?

As already highlighted (Warren, 2005; LDA, 2004) most pupils of African heritage feel excluded or not belonging to their mainstream school. In mathematics learning, these pupils have very little to identify with and often what exist is misrepresented (Shan and Bailey, 1991). School textbooks show negligible positive role models for pupils of African heritage in spite of the abundance of such resources. These concerns led Claudia Zaslavsky (1979) to highlight the contribution of Africans to the science of mathematics in order to encourage African-American pupils to regard mathematics as part of their own

cultural heritage. Similarly, the richness of African mathematics is at the core of the work of Paulus Gerdes (2006, 1999), in uncovering mathematical ideas embedded in African cultural practices. The development of learning materials that genuinely incorporate the historical role of Africans in our present understanding of mathematics is likely to contribute to the quality of the mathematics curriculum by providing good opportunities for all pupils to value the mathematics that we have inherited from other cultures.

Schools are beginning to search for ways to address the need to support pupils of African heritage to achieve their potential. In England, the National Curriculum provides the guideline within which schools function and as such it stresses the need for promoting pupils' spiritual, moral, social and cultural development through mathematics. As an example, the National Curriculum states that mathematics provides opportunities for cultural development:

> Through helping pupils appreciate that mathematical thought contributes to the development of our culture and is becoming increasingly central to our highly technological future. (DfES, 1999, p.8)

Kassem (2001) however, concludes that with regards to ethnic minorities, the National Curriculum does not clarify whose culture should be promoted in view of the multicultural character of contemporary England. Kassem argues that although the National Curriculum deserves credit for acknowledging the contribution of many cultures to the development of mathematics still it fails to give a socially or historically critical stipulation towards its delivery. In other words, the multicultural aspect of mathematics is treated as an appendage to the main mathematics curriculum, and consequently, it falls short in offering real opportunities for pupils from ethnic minority backgrounds to advance.

Added to the lack of great concern for the provision of appropriate historical and cultural setting in the delivery of school mathematics, the impact of public examinations and league tables on schools (Harlen and Deakin Crick, 2002) is most likely to influence schools and teachers to adopt strategies that ultimately must conform to the delivery of mathematics in less than adequate historical and cultural terms. For Ernest (2001), the content of the National Curriculum provides insufficient opportunities to account for the diverse social and cultural experiences of pupils. Ernest argues that the structure of the National Curriculum is that of a single fixed hierarchy within which all pupils in state schools are expected to work their way through the curriculum materials irrespective of age, aptitude, interest and need. As a result it only serves to reproduce inequalities in social opportunities. The difficulties facing schools in supporting all their pupils to flourish is immense, and how they succeed in providing the needed support will depend in part on their appreciation of the ideological positions and tensions within which they function.

The future ahead of us

The poor performance of pupils of African heritage in attaining reasonable mathematical proficiency in spite of their competence in informal mathematical

thinking before entering the educational system may be rooted in the severely disadvantaged background (Schama, 2006; Du Bois, 1989; Washington, 1986; Fanon, 1986; Davidson, 1980; Kay, 1967) from which they have emerged. Today remnants of such disadvantages encapsulated in current issues concerning race (and social class) continue to persist in education. (Mirza, 2005; Gillborn, 2002).

How racism, that is, the notion that human beings can be divided into various races based on physical and nonphysical attributes, is manifested in contemporary social relations, has more to do with how we distance ourselves from others, what Dei (1996) refers to as 'between self and other' or 'between us and them'. When such distancing is embedded in how an institution or organisation functions, a system is created that perpetuates racism throughout the institution or organisation. Macpherson summed up the concept of such a system as:

> The collective failure of an organisation to provide an appropriate and professional service to people because of their colour, culture, or ethnic origin. It can be seen or detected in process, attitudes and behaviour which amount to discrimination through unwitting prejudice, ignorance, thoughtlessness and racist stereotyping which disadvantage minority ethnic group people. (Macpherson, 1999, p.23)

Concern for such a system operating in the provision of education in England has long been emphasized (Richardson, 2005; Gillborn, 2002; Rogers, 2001; Coard, 1971). Gillborn boldly raised the question regarding institutional racism as follows:

> If we can't discuss it, how can we defeat it? (Gillborn, 2005, p.94)

For Gillborn, the issues about institutional racism in education must be uncovered and addressed so that the provision of quality education for all pupils, regardless of race, is justly achieved. To this end he maintains that a lot has been done to address some of the pressing issues within the educational system:

> But much has remained unchanged. We have more research than 35 years ago and we have more academically successful Black children – and yet we still endure a system that fails disproportionate numbers of Black children, excludes many from mainstream schooling altogether, and channels others into second-class courses deemed more appropriate by a teaching force that continues to be unrepresentative of the community it serves. The need for radical change is as pressing today as it ever was. (ibid, pp.95-96)

In mathematics, the divisive three tier system of grading has now been replaced by a two tier model (Qualifications and Curriculum Authority (QCA), 2006) in order to create opportunities for more pupils to successfully achieve no less than grade C in the General Certificate of Secondary Education (GCSE) in the subject (see Table 2). The tier chosen for pupils to follow will be based on what teachers expect pupils to achieve in their final GCSE assessments.

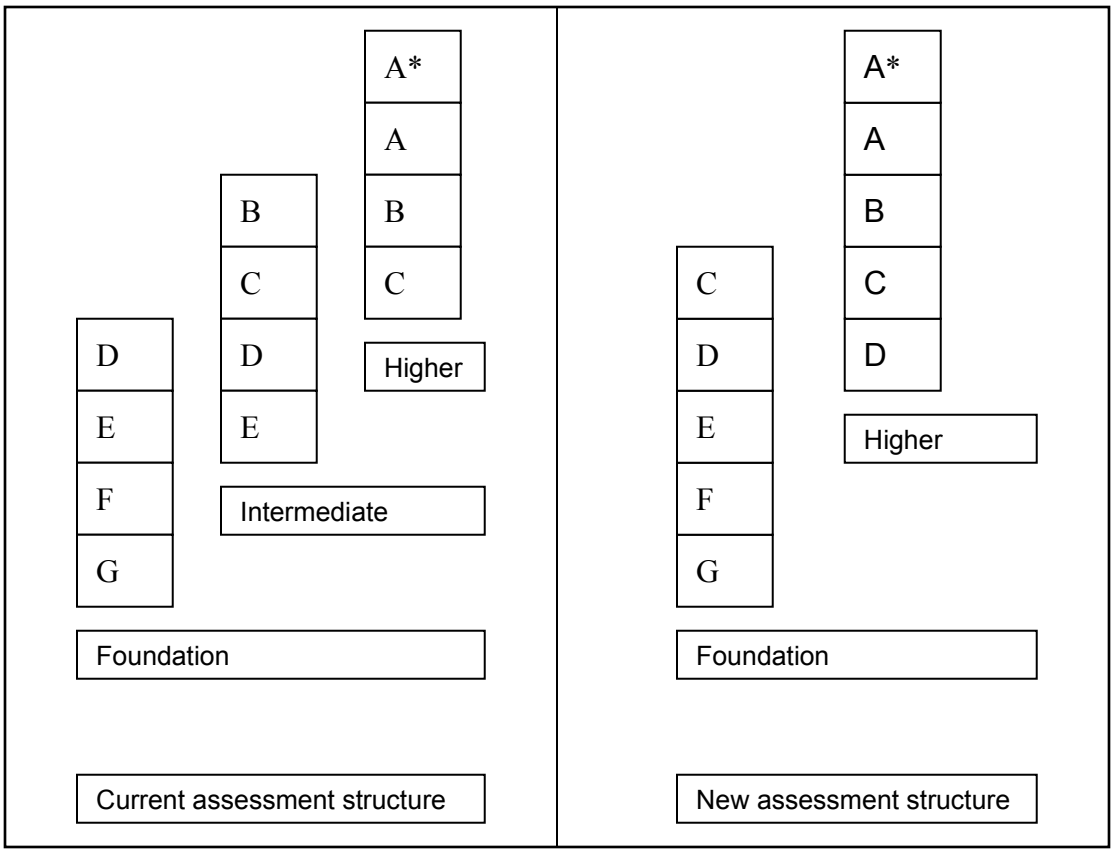

Table 2: The new two-tier assessment model for GCSE mathematics (QCA, 2006)

The first teaching for the new GCSE mathematics qualifications commenced in September 2006 and the first certification will be awarded in 2008.

Nevertheless, changes to the assessment model without changes to how teachers and schools support their pupils in the classroom is likely to yield no better results for pupils of African heritage. Creating an environment that deeply values the contribution that people of African heritage have made to our understanding of mathematics can help to encourage pupils of African heritage to share in the rewards associated with learning the subject. In order to create helpful environments, important factors such as caring (Noddings, 2005) and compassion (Ladson-Billings, 1997) must form an integral part of the approach for supporting pupils of African heritage to succeed in learning mathematics at school. In providing such support for pupils the quality of care that is exercised is of vital importance. In particular, the care that parents show towards their children's progress at school; the care with which teachers support and guide all their pupils' learning; the caring ethos that schools development to support their teachers, pupils and their parents, and above all, the caring vision with which local and national government direct schools.

Conclusion

In drawing attention to the progress of pupils of African heritage in learning mathematics, I discussed the general school experiences of pupils of African heritage and then I focused on their attainment in mathematics. I explored some of the challenges that their underachievement present for schools and teachers.

The well-being and progress of every child in learning mathematics at school as indicated by Smith (2004) does matter especially in our present digital age. Some groups are progressing as expected whilst others are failing to do so. The persistent underachievement of pupils of African heritage is a challenge that must be confronted and defeated. It is not for want of research that this cannot be done; for much research has been gathered over the past four decades (LDA, 2004). While legislations are useful in persuading teachers to treat all pupils with dignity, the crucial importance of genuine care and compassion cannot be overlooked if real progress is to be made in supporting all pupils.

The challenge posed by the lack of academic success for pupils of African heritage and the ensuing approaches that are adopted in finding lasting solutions will have far reaching implications for the liberal democratic values of justice and equality that we uphold.

Notes

1. Tiering refers to the different examination papers that pupils are entered to sit in their final General Certificate of School Examinations (GCSE) instead of a single common examination paper. See Table 2.
2. Compulsory schooling in England is divided into 4 Key Stages with national assessments at the end of each Key Stage. Key Stage 1 covers pupils aged 5 to 7, Key Stage 2 covers pupils aged 7 to 11, Key Stage 3 covers pupils aged 11 to 14 and Key Stage 4 covers pupils aged 14 to 16 at which point they sit their final examinations (GCSE). At the end of each Key Stage pupils are expected to have reached a given level of achievement for their age.

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