Room at the Top

Inclusive education for high performance

Deborah Eyre

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Policy Exchange

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About the Author

Professor Deborah Eyre is Education Director for Nord Anglia Education and responsible for education strategy in this global education company. An academic by background and Visiting Senior Research Fellow at Oxford University she is internationally recognised for her work on gifted education and has worked for governments in the UK, Middle East and Far East on education policy and system design for high performance. The former Director of the National Academy for Gifted and Talented Youth (NAGTY) at the University of Warwick she has served on the Boards of the Training and Development Agency for Schools (TDA) and the National College for School Leadership (NCSL). A well known international speaker and widely published author she is interested in all aspects of education and contributes regularly to educational debates.

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Executive Summary

How do we make sure that our education system produces lots of high performing students?

In the 1950s the most popular approach was a 'cohort' perspective: the challenge was to identify, at some point, the limited number of 'gifted' students, who were quite different to mainstream students, and required a different kind of education. This approach was reflected in grammar schools. In some ways, it was a major improvement on what had gone before, as it recognised for the first time that there were large numbers of pupils capable of high levels of achievement.

However, academic research about how to educate for high performance has moved on a long way in recent decades. There is greater scepticism about the popular idea that some people are simply born (or 'gifted') with a talent. As in sporting success, desire is a critical factor. Yet in our society the highest goal is effortless achievement – nobody wants to be seen as a 'try hard'. But as many other cultures recognise, children who try harder do better.[1]

The 'human capital' approach, which has become dominant in more recent decades, suggests that we should not be trying to 'find' the gifted, but trying to *create* high performers. However, for various reasons – including an exaggerated fear of 'elitism' – this new thinking has rarely found expression in new approaches to public policy.

When children are tested at a young age and retested over time there is substantial regression to the mean. In other words, a child performing at a high level at six years old may well not be at 16. While a kind of 'early years determinism' has become fashionable, recent research into neutral plasticity demonstrates that, even though

1 This point has been popularised in recent years by Malcolm Gladwell's book *Outliers: The Story of Success*. This draws on a thesis of Dr Anders Ericsson, who argues that high achievement typically requires thousands of hours of practice.

significant changes occur in the brain during early childhood, there is little evidence to suggest that this period is the most critical. So we need an approach which will recognise and nurture signs of high performance wherever, and whenever, they might occur. There are many more pupils capable of high performance than we currently recognise. Indeed, evidence from HMI and Ofsted finds that a lack of intellectual challenge is a consistent feature in lessons in many schools. Some 46% of students found their school work too easy and 42% found their schooling boring.

> "We need an approach which will recognise and nurture signs of high performance wherever, and whenever, they might occur"

This paper draws on the author's experience running The National Academy for Gifted and Talented Youth (NAGTY) which ran between 2002 and 2007. The Academy provided extracurricular activities for students between 11 and 19 years of age. It introduced pupils to leading academic experts through summer schools, residential courses, as well as online material. Essentially, NAGTY was about stretching gifted students from a wide range of backgrounds whilst keeping them in mainstream schools.

It accepted students from all schools, whether state, City Technology Colleges (CTCs), grammar or private, and accepted all students deemed to be performing in the top 5% in some area – roughly 200,000 pupils. It also provided support to teachers, and aimed to improve provision for high-ability pupils within schools.

Unlike many schemes for the gifted it was not focused merely on advanced course provision but on helping individuals to understand how to achieve their ambitions. It used digital technology to create communities linking students to academics in an informal but structured way. It had a wide variety of online academic study groups that students could choose to join, and many did.

NAGTY provided an alternative model where out-of-classroom activities were carefully designed to make a serious contribution to high performance. They were the cognitive equivalent of the

competitive athletics club or the youth orchestra. This paper argues that NAGTY provided an interesting glimpse of what is possible. This is a model which is being adapted and adopted in high performing education systems like Hong Kong.

Recommendations

Recently we in the UK have been preoccupied with floor level targets; level 4 at age 11, A-Cs at GCSE and reducing the number of NEETS.[2] We have created a system that requires that most pupils reach mediocrity and which asks schools to arrange their structures with this as the primary expectation. We need to change our expectations with:

- A National Curriculum that expects advanced cognitive performance and places a value on advanced subject knowledge and high level skills.
- Qualifications reviewed to prioritise and reward high performance.
- An Ofsted framework revised to judge schools' ability to nurture high performance as the main criteria of school quality – not through an additional tick box, but through a complete gear change in what inspectors look for in a school
- The abolition of 'floor targets' and making figures for the number of children achieving at advanced levels more transparent at school, local authority and national levels. Top schools in both the state and independent sector do this already – celebrating their pupils' university destinations and real-world achievements, not just exam scores.
- Current 'cliff edge' performance measures based on the number of pupils scoring above a D at GCSE create distorting incentives to focus on the 'D/C boundary'. A measure based on points scored (perhaps capped, on in a core of subjects) would be preferable as a lead indicator, so that moving a child from an A

2 Not in Education, Employment or Training

to an A* is valued equally to moving him or her from a D to a C. This would replace the current five A*-C measure as the 'leading' measure, although this data would still be published.

- Alongside such a different lead measure, the government should also add data on high achievement to the annual school and college performance tables. Newspapers such as the Financial Times independently publish school-by-school data on the percentage of entries in core subjects which are awarded an A* grade. The government should also publish this data for GCSE and A levels.

The current "Gifted and Talented" agenda is marginal in most schools. Schools should be required to offer advanced learning opportunities as the norm and routinely expect large numbers of pupils to perform highly on them. These should be offered in class and through selective enrichment or extra-curricular activities.

We should also recognise the importance of informal learning opportunities. In the 21st century learning is not just confined to the classroom. This is not an aspirational statement; it is what is happening now. The system needs to exploit the possibilities offered by informal learning and recognise the contribution it can make to securing high performance. In particular it needs to look at the possibilities offered by providers other than the school and see them as a key part of the learning landscape. Middle class families have always seen the value of informal learning – we can enhance the offer to them and at the same time widen its availability to others.

These opportunities do not all have to be free. Many parents are willing to pay, and scholarship schemes coupled with the pupil premium could ensure full access. To improve informal learning we should:

- Encourage and accredit providers who want to offer specialist, out-of-school advanced learning opportunities in cognitive domains on a local, regional or national level (face-to-face or online).

- Create incentives for universities, private and third sector groups – including independent schools – to become more actively involved. Accreditation is an integral way of making this work because schools can only be expected to pay for opportunities they can be sure are worthwhile. Too much resource has been wasted in business philanthropy and university widening participation because it is ad-hoc and fails to show children that good universities and rewarding professions become available through performing highly at school.
- Encourage pupils to get involved by offering recognition for engagement.
- Establish a 'National Centre for Advanced Performance in Education'. Building on the initial work of NAGTY this centre would act as a catalyst for this work, making the case for a focus on high performance, offering advice at all levels of the system, providing training for teachers, out-of-school advanced learning opportunities for pupils and ultimately fostering the development of a self-sufficient sector to do this in the long-term.

1. Introduction

Two of the most significant, long running and unresolved debates in education are, firstly the issue of how to raise the overall performance of an education system, and secondly how to support the most able pupils within the system. For the most part these debates have been conducted in isolation. The system performance debate has generated seemingly endless deliberation about the relative importance of schools structures, the quality of teachers, inspection frameworks and curricula. The gifted education debate has focused on how to identify and educate a fixed and relatively small cohort with a special gift – the ability to achieve advanced levels of cognitive performance.

The flaw in the system performance debate is that, whilst it focuses on the structural factors which seem to be significant in different ways in different high performing systems, it has largely ignored the one thing that is present in *all* high performing education systems: significant numbers of high performing pupils. By contrast, as I will set out in detail later, a hundred years of gifted education has shown up the various flaws in an approach based on identifying the gifted – it hasn't worked and it can't work.

In this report I will argue that more pupils than we previously thought have the potential to perform at the highest levels – that is to achieve advanced levels of cognitive performance – and that the way to secure this is to create a system that expects significantly more from more pupils. The consequence of such an approach will be to raise the performance of the whole system, more surely than through any specific structural or pedagogical reform. Gifted education tells us exactly how to achieve this. There really is 'room at the top' if we systematically nurture more children to get there.

How this report is structured

In the UK we assume that only a small minority of children can achieve really high levels of academic performance and structure our system accordingly. We create a group of pupils called 'gifted children' and limit their number to 5% of the school population.[3] Since it is only a small minority we give them little attention – £77 million between 2002 and 2009.[4] This is a deeply flawed and old-fashioned approach. Indeed we don't stop there, we go further and presume we know who these gifted children are from an early age. We presume that a child's educational destiny can be more-or-less determined at birth by looking at a combination of their genetics and family background. Those who do well and come from disadvantaged backgrounds surprise us – we very patronisingly say they 'succeed against the odds'. Chapter 2 sets out how we got to this position.

"Those who do well and come from disadvantaged backgrounds surprise us – we very patronisingly say they 'succeed against the odds'"

Chapter 3 argues that this preoccupation with predetermination is a British problem of our own creation, rather than a human condition, and that it holds back our ability to create a high performing education system. By writing off large numbers of pupils, particularly those from disadvantaged backgrounds, at an early age we are failing to take account of new thinking and new possibilities about how high performance is developed. The key to all of this is that contemporary evidence around children's cognitive development from the fields of education, psychology and neuro-science suggests that the development of advanced cognitive performance is strongly influenced by alterable factors. If we could just make our education system work more effectively then we could, indeed should, expect high performance from far more students.

So this expectation should be central to the ambitions of our education system, as indeed it is for many of the most successful education systems.[5] We should expect many more students to reach

3 DCSF (2008) *Identifying gifted and talented learners – getting started*. p.1 Available http://nationalstrategies.standards.dcsf.gov.uk/downloader/1648d3e4d655082cee6c30164ae8d496.pdf

4 House of Commons Session 2009-10 Children, Schools and Families Committee – Minutes of Evidence The Gifted and Talented programme http://www.publications.parliament.uk/pa/cm200910/cmselect/cmchilsch/337/10020101.htm

5 McKinsey and Company (2007) *How the world's best-performing school systems come out on top*. London: McKinsey and Company. Available http://www.mckinsey.com/App_Media/Reports/SSO/Worlds_School_Systems_Final.pdf

the academic levels once seen as the preserve of the very few. We should structure the education system with this in mind. Rather than creating a system which focuses on early detection of signs of failure, with pupils guided immediately into less demanding work, the system should be structured to provide the conditions that generate high performance and pupils steered towards this objective. Dismissing children at an early age as being unable to cope with advanced cognition is to ignore neuroscience, which states that if you are under the age of 70, learning higher skills remains a realistic activity. The fact that a child is not a high performer right now does not indicate that they are unable to become one.

As Chapter 4 sets out, the benefits for the country of having greater numbers of 'gifted' achievers who can contribute towards economic prosperity and future wealth are well documented and considerable. For instance, a one point increase in the proportion of the workforce with a degree can lead to a 0.5% increase in productivity.[6] Some estimates even suggest that if the entire workforce were to gain a degree, productivity would increase by 30%.[7] For individuals as well, education matters more than ever.[8] High levels of educational attainment for the individual contribute to improved quality of life and economic returns from sustained, satisfying employment.[9] For example, over the course of a working life, the average graduate earns in excess of £100,000 more than someone with A levels who does not go to university.[10] It is a prize worth having.

Equally important is the threat of inaction. The Asian 'Tiger' and Middle East countries are already powering ahead with this kind of approach and when their education systems start to match ours in terms of sophistication they are set to outperform us at every level. China, for instance, has seen a four-fold increase in the number of undergraduate admissions between 1998 and 2004,[11] making it the biggest single provider of higher education in the world.[12] We are already beginning to fall behind and the consequences of inaction could be profound.

6 Machin, S. et al. (2003) *Sectoral and Area Analysis of the Economic Effects of Qualifications And Basic Skills*. London: Centre for the Economics of Education, p.32, Table 7. Available http://www.education.gov.uk/publications/standard/publicationdetail/page1/RR465

7 Galindo-Rueda, F. & Haskel, J. (2005) *Skills, workforce characteristics and firm-level productivity in England*. London: DfES, p.36, Table 5. Available http://www.bis.gov.uk/files/file11000.pdf

8 Woolf, A. (2002) *Does Education Matter?* London: Penguin books

9 OECD (2008) *Highlights From Education At A Glance 2008 – 2. The Economic Benefits of Education.* Available http://www.oecd.org/dataoecd/16/49/42244848.pdf

10 Browne (2010) *Independent Review of Higher Education Funding & Student Finance*, p.15. Available http://www.bis.gov.uk/assets/biscore/corporate/docs/s/10-1208-securing-sustainable-higher-education-browne-report.pdf

11 Marginson, S. & van der Wende, M. (2007) *Globalisation and Higher Education*, OECD, p. 6. Available http://doc.utwente.nl/60264/1/Marginson07globalisation.pdf

12 Ibid.

Expecting more children to become high-performers is a realistic option and it is happening elsewhere, and this is discussed in Chapter 5. We do not know exactly how many pupils can reach the high levels of performance we previously ascribed as only for those we have deemed 'gifted'. The evidence indicates it is significantly more than at present and that if we raise our expectations even those who fall short of 'high performance' will do better than under the current regime. Countries that focus on expecting high academic achievement from more children have a fairer system, with children from all backgrounds making good academic progress. They also seem to avoid having a long tail of underachievement and significant behaviour problems in schools. They are not looking to categorise students as failures, unable to cope with traditional academic work, but rather expecting excellence in a wide variety of domains – both academic and non-academic – and valuing them all.

Chapter 6 argues that what holds us back from achieving this outcome in England is a combination of out-dated beliefs. They relate to the nature of ability and academic performance, a national obsession with allocative 'fairness' in education and a well-intentioned but flawed rescue mentality which protects pupils from cognitively demanding situations. The result is a reduction in aspiration. Together these beliefs represent a powerful cocktail that retains the status quo and ensures that those achieving the highest levels of educational performance will continue to be primarily from the affluent middle classes.

While we do not know exactly how many pupils can reach the highest levels of educational performance that we previously ascribed as only achievable by a small number of 'gifted' pupils, but the evidence is that it is more than currently do so, and even those who fall short will achieve more highly than under the current regime. Chapter 7 sets out recommendations to achieve this.

2. The Story of Gifted Education

> *There is an inborn ability difference between child and child. This sets the limit of possibility beyond which we cannot teach the child. The best teaching in the world may prove barren if it falls on the stony ground of an inherently dull and lifeless mind. (Susan Isaacs, 1932)*

Some people think that an educational focus on the most able pupils is elitist and irrelevant. Yet what this chapter suggests is that what was once thought irrelevant has turned out to be central to creating a high-performing educational system.

Society has long held the view that a small minority of people have the capacity to achieve at a cognitive level that is unobtainable to the rest of us. We have been fascinated by these people and in awe of their achievements, but it is only in the last 100 years or so that serious study about them has taken place. This field of study has produced some surprising results and in particular suggests that what we once thought was rare may actually just *appear* to be rare. Some researchers[13] have even suggested that we can, if we try, create high performance levels in certain domains in any individual.

Over the last 100 years thinking in gifted education has developed through three broad phases. In the early to mid 20th century it focused on a small number of unique individuals (Unique Individual Paradigm). The mid to late twentieth century saw the advent of a focus on selecting groups of gifted students from amongst the general school population (Cohort Paradigm). As we moved into the 21st century the focus of leading research has shifted away from identification and towards creating the educational conditions in which 'giftedness' might best be developed (Human Capital Paradigm). These types of changes

13 Ericsson, A.K., Roring, R.W., Nandagopal, K. (2007) Giftedness and Evidence for Reproducibly Superior Performance: An Account Based on the Expert Performance Framework. *High Ability Studies*, 18(1), pp.5-56

have come as we have learnt more about the nature of 'giftedness' and about 'gifted' people. They have been influenced partly by developments in psychology and more recently neuro-science and by looking at the lives of adults and children described as 'gifted'.

Yet these changes are not well recognised or understood by the general population or policy makers. They still tend to see the 'gifted' as unique individuals with abnormal, identifiable, inherited characteristics. They routinely assume that each of us has a set measure of inherited cognitive ability which will determine our finite performance level, with the 'gifted' having the highest measure.

Early thinking about 'genius' and 'giftedness' was focused on the idea of a few 'freakish' individuals

In the early to mid 20th century, study of the gifted suggested that they were very small in number and unique in characteristics – freaks of nature with almost mystical powers to think and perceive the world in ways unavailable to the rest of us. These people were to be treasured and revered. But they were irrelevant to the education system. Their occurrence was so infrequent and their needs so individual that they had no significance for education systems.[14] It was thought these gifted people would succeed despite their education. At this time the idea that giftedness could be influenced or *developed* was more or less unknown. Yet we now know that all outstanding individuals have encountered the opportunities, support and teachers that have enabled their success. The fact that Mozart's parents taught music was not just a coincidence.

In the mid to late twentieth century new ideas began to take hold. Instead of gifted individuals being seen as freaks of nature they were seen as the most advanced form of humans and worthy of special attention. Eugenicist theories, such as those of Galton,[15] led to attempts being made to define the outstanding human mental abilities and personality traits of these advanced human beings. They were thought

14 Terman, L.M. (1954) The discovery and encouragement of exceptional talent. *American Psychologist*, 9(6), pp. 221-30

15 Jensen, A. (2002) Galton's legacy to research on intelligence. *Journal of Biosocial Science*, 34, pp.145-172

to have inherited, definable, measurable, intellectual characteristics. Measurements of this intelligence (IQ)[16] began with early tests designed to identify those with the characteristics Galton had defined. This period, often viewed by the modern world with some distaste, did not seek to concern itself with education but it did take the first steps towards defining the advanced cognitive performance characteristics which would prove valuable in education later.

> "The 1920s brought the first significant implications for education systems with the idea that giftedness could be identified in *children* using IQ tests"

The 1920s brought the first significant implications for education systems with the idea that giftedness could be identified in *children* using IQ tests and that these 'gifted children' – those above an IQ threshold of 140 – would benefit from being educated in a different way from the majority. They were thought, by definition,[17] to be quite different from other children but also broadly homogeneous as a group with common learning needs. Structurally speaking, it was assumed that normal school-based education would provide inadequate levels of intellectual challenge for the cohort and therefore special educational opportunities needed to be put in place to compensate for inadequacies in the normal school offer. The idea of educational selection was born.

The selection of the gifted for gifted schools and programmes has served a useful purpose but it is not enough

In gifted education, this 'cohort paradigm' dominated most of the twentieth century: the gifted are special and we need to find them and nurture them. Schools and programmes for the gifted were created in many countries and, for those who qualified, the benefits were indeed considerable.[18]

However as the century progressed, developments in education, psychology and neuro-science began to question the assumptions upon which this selection was based.

16 Binet. A, Simon, Th. (1916) *The development of intelligence in children: The Binet-Simon Scale.* Publications of the Training School at Vineland New Jersey Department of Research No. 11. E. S. Kite (Trans.). Baltimore: Williams & Wilkins

17 Ross, (1993) in Robinson, N. M., (2003) Two Wrongs Do Not Make a Right: Sacrificing the Needs of Gifted Students Does Not Solve Society's Unsolved Problems. *Journal For The Education Of The Gifted*, 26(4), pp.251-273

18 Maurin, E. & McNally, S. (2007) *Educational Effects of Widening Access to the Academic Track: A Natural Experiment*. London: Centre for Economics in Education. Available http://eprints.lse.ac.uk/3648/1/Educational_effects_of_widening_access_to_the_academic_track%28ceedp85%29.pdf

First, numerous longitudinal studies on high performing adults (e.g. Nobel Prize winners) showed that, perhaps surprisingly, they were rarely outstanding as children so casting doubt on the value of early identification.[19] Indeed, for late developers, the mere existence of gifted programmes from which they were excluded might have served to limit educational opportunities and educational horizons.

Second, investigations into the background of those selected for gifted programmes or gifted schools in all countries showed a consistent bias towards the affluent majority population in the selection processes. This led to accusations that these programmes were structurally inequitable and merely served as a mechanism for further advantaging the already advantaged. In the USA in 2005, children from affluent families were found to be five times more likely to enter gifted programmes than their poorer peers.[20] Let us remember that the selection tests purported to be a scientific measure of innate intelligence and so should not have shown cultural bias.

Of course, the benefits of a place in a gifted programme were so considerable that the minority of disadvantaged pupils who did gain access became socially mobile. We are all familiar with this effect as a feature of selective education in post-war England. Those working class children who attended grammar school derived real benefits. However, although a minority of disadvantaged students benefitted, the overall selection bias towards the affluent middle classes also served to restrict social mobility on a larger scale.

Thirdly, experts started to think about what giftedness was and came to differing conclusions. IQ was still seen as influential in some quarters, but was challenged by a raft of newer ideas around the concepts of both intelligence and giftedness. The significance of both hereditary characteristics and the concept of general intelligence were questioned. New ideas such as multiple intelligence theory, where a single IQ score is replaced by a more complex range of different intelligences,[21] and expert performance theory, in which inheritance is discounted in favour of training,[22] jostled for attention in an increasingly overcrowded field.

19 Bloom, B. S. (1982) The Role of Gifts and Markers in the Development of Talent. *Exceptional Children*, 48(6), pp.510-522

20 Borland, J.H. (2005) Gifted Education Without Gifted Children: The Case for No Conception of Giftedness. In: Sternberg, R.J. & Davidson, J.E. (Eds.) *Conceptions of Giftedness.* Cambridge: Cambridge University Press

21 Gardner, H. (1983) *Frames of mind: The theory of multiple intelligences*. New York: Basic Books

22 Ericsson, A.K., Roring, R.W., Nandagopal, K. (2007) Giftedness and Evidence for Reproducibly Superior Performance: An Account Based on the Expert Performance Framework. *High Ability Studies*, 18(1), pp.5-56

No single definition of 'gifted' emerged. The majority of thinking now suggested that giftedness was a complex mix of nature and nurture and difficult to measure, so challenging the idea that tests of cognitive potential could identify gifted children.

Figure 1: The Eyre Equation

Source: Eyre 2009[23]

Fourthly, the actual education offered within gifted programmes came under scrutiny from educationalists.[24,25] Research into how 'gifted' children think and learn failed to identify any unique characteristics in the learning repertoire of pupils in gifted cohorts.[26] These 'gifted' children use the same repertoire as other children but more creatively – they solve problems, remember information and create ideas in essentially the same ways as other children but with more fluency and flexibility. The implication is that the approaches developed in gifted programmes to nurture advanced cognitive performance could potentially be used to advantage in general education. Indeed, confining their availability to a selected cohort might further advance some pupils at the expense of others.

Finally, labelling children as gifted increasingly became seen as unhelpful. For those labelled gifted the effect might be good or bad. It sometimes proved confirmatory and enabling – raising aspiration and confidence, or alternatively burdensome – creating massive pressure to achieve and stressing social difference. The benefits to the gifted of being labelled turned out to be questionable but the effect

23 Eyre, D. (2009) The English Model of Gifted Education. In: Shavinina, L. (Ed.) *The International Handbook on Giftedness.* Amsterdam: Springer Science & Business Media. pp.1045-161

24 Renzulli, J. S. & Reis, S. M. (1985) *The schoolwide enrichment model: A comprehensive plan for educational excellence*. Mansfield Center, CT: Creative Learning Press

25 Eyre, D. (1997) *Able children in ordinary schools.* London: David Fulton Publishers

26 Shore, B.M. (2000). Metacognition and flexibility: Qualitative differences in how gifted children think. In R.C. Friedman and B.M. Shore (Eds.) *Talents Unfolding: Cognition and Development.* Washington D.C.: American Psychological Association

on those judged to be 'not gifted' was definitely damaging – leading to a potential lowering of confidence and narrowing of horizons for the majority of the school population. So, attempting to identify gifted children was never going to be a popular education policy.

The latest thinking in gifted education is the human capital approach and this is the one we need to use

By the end of the 20th century the holes in the cohort paradigm became increasingly apparent and the approach was seen by many as untenable. A new way of thinking was needed. The human capital approach starts not with identifying 'gifted children' but instead is concerned with the systematic nurturing of high performance. It is goal focused. During the years of compulsory schooling it keeps an open mind about who has the potential to perform highly in adulthood and in which domains, setting high expectations for all children and encouraging excellence amongst any emerging elite performers.

> "The human capital model is the approach that will unlock both high performance for individuals and a high performing education system. It is the most effective form of gifted education"

Gifted adults are often, although certainly not always, good all-rounders but they tend to excel in a specific area, hence this is a domain-specific approach with 'the gifted' no longer seen as a homogeneous cohort with common learning needs, but as complex individuals who have differing interests, learn in different ways and at different speeds.

Much is known about what it takes to reach high performance in various subject domains and this approach works backwards from that. Looking at the expert writer, the expert chemist or the expert historian we know what knowledge they possess, what behaviours they exhibit and what techniques they deploy. The human capital approach uses this understanding of the goal, and the journey to it, to give children the right educational opportunities, support and encouragement to strive for high performance in each domain, realistic yet optimistic about the

fact that some will perform more highly than others. We are not saying that everyone can be a high performer, but we are saying that if you take this approach every person will do as well as they can, and more will reach the high levels of performance we have traditionally called 'gifted'.

'Giftedness' is still used by some proponents of the human capital approach, but as a term to describe an end point rather than a starting point. I prefer to talk about 'high performance', making it absolutely clear that our focus should be on trying to develop future performance instead of identifying illusive innate 'gifts'.

The human capital model is the approach that will unlock both high performance for individuals and a high performing education system. It is the most effective form of gifted education. It is the culmination of 100 years of study into the most able people and addresses the limitations in previous models of gifted education. The key implications of the human capital model for education systems are:

- Because there is no internationally agreed definition of giftedness it is impossible to say how big the cohort is, but this doesn't matter because we are nurturing high performance for as many people as possible.
- We are not trying to locate a cohort of gifted pupils but rather seeking to nurture high performance in as many pupils as possible. This means we are always on the lookout for early indicators of high performance so that it can be systematically nurtured, but so that the child can become an elite performer, not so that the child is labelled as 'born gifted'.
- High performance needs to be nurtured systematically in class every single day, not just in a separate programme from time to time. This means a more advanced curriculum, teaching and learning methodologies focused on creating excellence. Most of all it means a school culture which routinely expects many pupils to be capable of achieving advanced cognitive performance and which sees the role of the school as to make this possible.

- The system has to recognise the learner's own role in securing high performance and the role of other supporters such as parents, mentors and families.

So, leading edge thinking in gifted education is now no-longer about finding gifted individuals and educating them differently from others. Instead it is focused on maximising and nurturing 'giftedness'[27] and on creating the educational conditions in which high performance can be systematically nurtured and developed.

It does not reject heredity as a significant factor in high performance but it does recognise the importance of equally significant and alterable environmental factors.

The human capital approach is not about trying to find the gifted it is about trying to create them.

Table 1: Traditional and 'human capital' approaches to high performance

Traditional approaches to gifted education	Nurturing high performance using the human capital approach
Giftedness is inherited and some people are gifted and some are not.	Inherited characteristics may play a role in high performance but more people could perform at advanced levels than do so now, so we should focus on developing high performance in more people.
Giftedness can be identified in childhood, so we should select gifted children and educate them separately.	No clear single definition of 'giftedness' exists and there is no clear link between early promise in childhood and performance in adult life. High performance is best nurtured through a combination of high expectations in class, setting and selection for advanced opportunities out of class/school where appropriate.

27 Eyre, D. (Ed.) (2009), *Gifted and Talented Education*. London: Routledge. p.7

Traditional approaches to gifted education	Nurturing high performance using the human capital approach
Gifted individuals are a homogeneous group with similar and distinct learning needs.	High performers are complex individuals who have different interests, learn in different ways and at different speeds. High performance is defined by adult excellence in specific subjects or domains – not everyone is a good all-rounder.
There should be special programmes or schools for the gifted to compensate for paucity of normal school provision.	There is a place for extra or advanced provision to complement what takes place in normal schools. But high expectations in every classroom are crucial in order to give high performance a chance to emerge.
Gifted programmes should focus on developing generic cognitive abilities.	High performance requires the development of domain specific knowledge, techniques and behaviours as well as generic cognitive abilities.
Gifted children may not succeed without special support and opportunities.	No-one succeeds without the right support and opportunities. High performance needs these but also requires desire, aspiration and motivation on the part of the individual.

3. More High Performing People: What Education Wants, Education Gets

When Roger Bannister ran the 4 minute mile in 1954 he was unique, he was the only person who could achieve this pace. Rapidly other runners joined him and ran a similar pace. He was then exceptional but he was no longer unique. Today 4 minutes is a realistic target for all really good middle distance runners. What was once a unique achievement is today what we expect for a significant and growing number of people. If this can be achieved in athletics why should it not be so in education?

To suggest many more people can reach high levels of high cognitive performance may seem on the face of it to be absurd. We have always believed that for pupils to reach these levels of performance they must surely be something quite special. For a start they must have the right genetic profile. But not only that, they must also have access to a good education, come from the right family background and be themselves highly motivated and committed. So, those who can meet all the requirements must necessarily be very few. After all they have been very few in the past.

It is true that each of these factors may play a significant part in the attainment of high performance, and that their sheer complexity reduces the numbers of those who will eventually fulfil their cognitive potential. But is it theoretically possible for the percentage of high performers to be significantly increased if we systematically structure the education system to create the optimal conditions for success? The truth is that it is possible and as the next section shows

other countries are already making it work. We have learnt from the study of gifted education how to optimise cognitive performance in individuals and that is what we need to do.

Of course, wholesale increases in educational expectations are not unprecedented. We have previously made policy on the assumption that it is possible to make changes to the overall levels of pupil attainment simply by changing the design of the education system. The Education Act 1944 said that all children would go to secondary school and that greater numbers of pupils would be given access to the kinds of academic education which had hitherto been restricted to those educated in the independent sector. By setting the exit expectations for the grammar schools as high, the result was a significant uplift in overall national academic performance including for children from backgrounds where it was previously assumed significant levels of inherited intelligence was missing. When some secondary moderns began entering their most successful pupils for O levels it became obvious that these high levels could be the preserve of an even wider group. In Scotland the move from selective to comprehensive schools saw increased year on year attainment.[28] The 50% debate aside, it is hard to deny that more students are achieving good degrees from good universities than was the case 50 years ago. What education expects, education gets.

This chapter sets why more people could be gifted than was previously thought and dispels the myths.

The routes to high performance

High performance for individuals is most likely to occur if we: capitalise on any inherited predispositions, provide reasonable schooling, harness the support of families, and help pupils themselves to understand that their educational performance lies in their hands. Only they can make it happen.

28 McPherson, A. & Willms, J.D. (1987) Equalisation and Improvement: Some Effects of Comprehensive Reorganisation in Scotland, *Sociology*, pp.509-539

How much do genes matter?

In response to the question of whether some people are genetically predisposed to be more cognitively successful than others, I would suggest the answer has to be, of course. But then again we are nowhere near knowing the academic limitations on ability. Precisely *how* predisposed any particular individual might be to achieving high performance, and indeed in which areas, is an interesting academic debate but of little significance for education now or indeed in the next 100 years. Educationally speaking we are so far from capitalising on inherited pre-dispositions generally that the outlying limitations are of little concern. Simply put, we need to consider how best to exploit the intelligence we have before focusing the discussion on precisely *how much* capability each individual has.

We have known for some time that environment is a critical factor in the development of high performance.[29] Although we know it is important, we are much less clear about exactly how this effect works in a neuro-scientific sense. What cognitive neuroscience tells us is that the brain is a highly robust and malleable organ with the capacity to adapt to divergent environmental factors on demand and at almost any age. Hence it is possible to capitalise on inherited predispositions at any time and in many ways.[30] The resulting implication is that more people could capitalise on their inherited advantages if given the opportunity to do so.

For example, in education we have assumed for over half a century that the early years period is a critical one where, if the biological 'window' is not exploited, the opportunity to learn is missed forever.[31] We try to achieve good early years education for as many as possible, but also assume that the data on links between early years provision and future educational attainment confirms the view that if a child has poor opportunities in the early years then the die is cast; they will not perform highly.[32] It is not the case that all is lost if an individual's early years education is inadequate.

29 Sternberg, R.J. (1985) *Beyond IQ: A triarchic theory of human intelligence.* Cambridge: Cambridge University Press.

30 OECD (2007) *Understanding the brain: the birth of a learning science,* p.13.

31 Purdy, N. (2008) Neuroscience and education: how best to filter out the neurononsense from our classrooms? *Irish Educational Studies*, 27(3), p.198

32 Blanden, J., Gregg, P. and Machin, S. (2005). *Intergenerational Mobility in Europe and North America*. London: London School of Economics. Available http://cep.lse.ac.uk/about/news/IntergenerationalMobility.pdf

If a child encounters good schooling later then the brain has the capacity to respond. Performance now is not always a strong indicator of performance later. This stands opposed to the 'neuromyth' that says that if an opportunity is missed once then it is missed forever.

Deciding at any stage that significant numbers of children are unable to cope with advanced cognition is to ignore neuroscience. Where academic talent emerges, at whatever age and in whatever domain, it should be encouraged and nurtured. We do not know for certain who has the genetic capacity to achieve high performance but we do know that we are a long way from exploiting fully any inherited predispositions we may have. Hence at a macro level, the numbers who could, in theory, achieve high performance are certainly more than the current number and could arguably be very substantially more.

If the next century of education brought us to a point where we could get children so close to achieving their academic potential that heredity became important, that in itself would be an achievement.

Families make a difference, but exceptional performance doesn't just come from exceptional families

The role of the family in creating high performance is also significant.[33] Contrary to popular belief this does not involve 'hot housing' young offspring in the hope of maintaining their performance at a level that significantly exceeds that of their peers. It involves providing a stable, interested and encouraging family environment. Gifted adults were seldom child prodigies.[34] They were usually in the top set at school but not exceptional. Parenting for high performance is not a special skill – anyone can do it. It is about encouraging the child to develop good study habits and an interest in learning; to think for themselves and to acquire the

33 Freeman, J. (1998) *Educating the Very Able: Current International Research*. London: TSO.

34 Bloom, B.S. (1982). The Role of Gifts and Markers in the Development of Talent. *Exceptional Children*, 48(6), pp.510-522

habits of reflecting, discussing and questioning. There is no barrier to more families doing this effectively.

This is not to say that families don't make a significant difference. It is well-documented that middle class parents recognise the value of educating informally at home. They use their wealth and social capital to get their children into good schools and they engage proactively with teachers to squeeze all they possibly can from the school experience. Many working class parents also aspire for their children, but the middle class parent is more likely to take their child to the museum, to buy a house in the catchment area of a high performing school and to intervene if they think their child has been put in too low a set for maths. They have the confidence to know how to get the best for their child from the education system.

However, the idea that teachers might share the knowledge they have gleaned about how parents can best support their child's learning at home is a rather more recent concept. The DCSF concluded in 2003 that the achievement of pupils, and especially working class pupils, could be significantly enhanced if we systematically apply all that is known about parental involvement.[35] So we could do more to help parents of all classes be effective in nurturing gifted behaviours in their child and this would have the greatest benefit for the least educated families. The system needs to see families as a means of creating high performance not a barrier to it.

Schooling is important, but the high performance agenda does not need to wait for all schools to be high performing

Schooling is definitely an important factor in the creation of high performance but perhaps not as great a factor as is sometimes suggested. Parents and peers seem to make the greatest difference to the performance of individuals with schools playing less of a role

35 Desforges, C. & Abouchaar, A. (2003) *The impact of parental involvement, parental support and family education on pupil achievement and adjustment: A literature review.* Research Report RR433, Department for Education and Skills.

than one might imagine.[36] This is because high performance is not the same as being 'school smart'. It goes beyond an ability to pass exams and focuses more on the development of a wider range of skills, only some of which are tested in examinations. Whilst it is certainly important to improve the influence of schooling, it is perhaps encouraging that its influence is not as strong a barrier to the academic performance of individuals as it might at first appear.

"Whilst it is certainly important to improve the influence of schooling, it is perhaps encouraging that its influence is not as strong a barrier to the academic performance of individuals as it might at first appear"

Good schools do, however, seem to be better at facilitating high performance in their students, so the more good schools we have, the greater the numbers of high performing students will be. They do so through a combination of their own culture of high expectations, appropriate and challenging curriculum careful progress monitoring and a concern for the personal development of individuals. They overtly recognise, celebrate and reward high achievement. They focus on creating fully rounded, educated pupils, not simply 'exam passers'. This is the key to unleashing high performance and the model we need for schools.

The research on gifted education and the experiences of the National Academy for Gifted and Talented Youth suggest that whilst good schooling is highly desirable, high educational performance for individuals is not entirely dependent upon it. Some pupils do well despite inadequate or disrupted schooling. The influence of other informal learning channels such as the internet, parents and the sheer determination of students themselves can minimise the influence of poor schooling. Therefore, whilst high performing schools are integral to increasingly the number of high performing individuals, given that school is not the only place that pupils learn, comprehensive system change is not a prerequisite to beginning this the process of increasing the numbers of high performing students.

36 Robertson, D. & Symons, J. (1996) *Do Peer Groups Matter? Peer Group Versus Schooling Effects On Academic Attainment.* London: Centre for Economic Performance.

More children can achieve high performance if you let them believe it is possible

One of the most neglected aspects of the education debate is what the pupils themselves want to achieve. As in sporting success, desire is a critical factor. Yet in our society the highest goal is effortless achievement – nobody wants to be seen as a 'try hard'. But as many other cultures recognise, children who try harder do better. Significant academic success is achieved as a result of practice, persistence and dogged determination in the face of adversity.[37] Despite the romantic myths of effortless cognitive superiority, the reality is that no-one reaches advanced cognitive performance in adult life without having or developing these characteristics and no-one gets there just by doing the compulsory set work.

> *"The emerging picture from such articles is that ten thousand hours of practice is required to achieve the level of mastery associated with being a world-class expert. It seems it takes the brain this long to assimilate all it needs to know for true mastery."*[38]
>
> Daniel Levitin

Individuals must develop a love of the subject and a desire to learn more. Yet our current approach to labelling children (including choosing gifted cohorts) does not encourage this. It suggests to them that they have a predetermined, finite ceiling to their level of achievement. An elite few think they can be 'stars', but many conclude, at a relatively early age, that high attainment is not within their grasp. They see themselves as powerless. This limits the percentage of pupils who will go on to achieve high performance.

This can all be changed without significant cost. Pupils can begin to understand that effort on their part can bring substantial academic

37 Gladwell, M. (2008) *Outliers: The story of success*. London: Allen Lane.

38 Levitin in Gladwell, M. (2008) *Outliers: The story of success.* London: Allen Lane. p.40

rewards. Their future is in their hands. The previous educational outcomes of their family, the school they attend and the place in which they live need not determine how well they will achieve academically – they can determine that themselves. It is not only possible for more pupils to achieve high performance, but we know how to help them do so.

4. Why Should We Care About High Performance?

Is it really worth the effort that would be required to create this change in the education system? High performance is certainly good for children and families, it is good for society and most of all it is good for the economy.

A function of any educational system is to create well educated 'talent' for the future workforce and the more the better. It is undoubtedly in Britain's interest to develop a high skill economy. Our country's future depends on it. Global evidence suggests that talent is in short supply and that this trend will become more acute over the next ten years.[39] Not only that, the evidence suggests newer, thriving industries require increasingly high levels of education. 11 of the 20 fastest growing occupations require a Level 4 (degree level) qualification as standard,[40] whereas only one out of the 20 fastest *declining* occupations demands the same.[41] It has been estimated that, even after the recession, over half of businesses surveyed are concerned that they will not be able to fill posts requiring graduate/higher skills in the coming years.[42] To close this 'talent gap' we would need a very significant uplift in the numbers of children performing highly in schools – not an incremental improvement in standards but a step-change in achievement levels. This is not a debate about whether to offer vocational courses at 14 or increasing the number of apprenticeships, it is about high levels of education and skill and that involves advanced cognitive thinking.

Employers are already indicating that they are unhappy with the quality of young people coming out of the education system. The standard of graduates' language skills (49% of those surveyed) is a typical problem.[43] This is likely to be amplified

39 Manpower Inc. (2007) *Confronting the Talent Crunch: 2007*. Milwaukee: Manpower Inc. Available https://candidate.manpower.com/wps/wcm/connect/3468b8004ec2f4efb5d1f5ee16aecd97/Confronting_the_Talent_Crunch_2007.pdf?MOD=AJPERES

40 UKCES (2010) *Skills for Jobs: Today and Tomorrow,* Vol.2, p.27. Available http://www.ukces.org.uk/upload/pdf/UKCES_NSSA_Report_23.3.10_1.pdf

41 Ibid., p.28.

42 CBI News Release, 17 May 2010, *DEMAND FOR HIGHLY-SKILLED STAFF SET TO GROW DURING THE RECOVERY – CBI/EDI SURVEY*. Available http://www.cbi.org.uk/ndbs/press.nsf/0363c1f07c6ca12a8025671c00381cc7/835a38cc3458824280257722003ecd7a?OpenDocument

43 CIHE (2008) *Graduate Employability: What do employers think and want?* p.5. Available http://www.cihe.co.uk/wp-content/themes/cihe/document.php?file=0802Grademployability.pdf

by the low take-up of languages at GCSE in schools. According to the Organisation for Economic Co-operation and Development (OECD), secondary pupils in England spend less time studying foreign languages than anywhere else in the developed world, with only 7% of 12 to 14-year-olds' lesson time being allocated to languages. This puts England joint-bottom of a table of 39 (mainly) developed countries, alongside Ireland and Estonia, and behind the likes of Indonesia and Mexico.[44] A lack of language skills is one of the reasons why British firms are looking abroad to fill their international posts.[45] What we expect of our pupils in school right now matters for our economic future.

The future direction of the high-end job market would indicate that we will need ever more pupils performing at high levels. For example:

- ***Low-Carbon Industries.*** Some estimates predict that the low-carbon economy, which currently employs around 30,000 people, has the potential to create over 160,000 jobs by 2020.[46]
- ***The Life Sciences.*** We are likely to see growth in the medical sciences sector, especially with stem cell research and tissue engineering, where Britain is leading the world.[47]
- ***Emerging Technologies.*** The nanotechnology sector estimates that by 2014 the global market in nanotechnology sales will be approximately $2.6 trillion; this is 15% of total world sales of consumer goods.[48]
- ***Aerospace.*** Expected to require an extra 400 Level 4+ workers per annum.[49]
- ***Financial Services.*** London remains, in spite of the credit crunch, one of the financial capitals of the world. Oxford Economics predicts that employment levels in financial services will be back to their pre-recession levels by 2015.[50]

44 Stewart, S. (2010) *English pupils are world-beaters – at not learning foreign languages.* 10 September. Available http://www.tes.co.uk/article.aspx?storycode=6057609

45 CBI News Release, 16 *November 2007, SKILLS SHORTAGES FORCE LONDON BUSINESSES TO RECRUIT FROM OVERSEAS – CBI / KPMG.* Available http://www.cbi.org.uk/ndbs/press.nsf/0363c1f07c6ca12a8025671c00381cc7/c3fce21400269b3580257393003eea76?OpenDocument

46 UKCES (2010) *Strategic Skills Needs in the Low Carbon Energy Generation Sector*, p.119. Available http://www.ukces.org.uk/upload/pdf/UKCES%20Low%20Carbon%20Full%20Report%20v4.pdf

47 MoD (2007) *Development, Concepts and Doctrine Centre Strategic Trends Programme 2007-2036*, p.59

48 CEDEFOP (2009) *Skills for Europe's future: anticipating occupational skill needs.* Luxembourg: Office for Official Publications of the European Communities. p.86. Available http://www.cedefop.europa.eu/EN/Files/5194_en.pdf

49 Semta, et al. (2009) *Skills and the future of Advanced Manufacturing*, p.15. Available http://www.cogent-ssc.com/research/Publications/ADVMFG_FINAL_March2010publish.pdf

50 Oxford Economics (2010) *The Economic Outlook for London*. Available http://www.oef.com/Free/pdfs/ukmfeat4_1010.pdf

Competition from developing countries

But this issue is not just about meeting the needs of employer – it is also about protecting our next generation. If we do not educate more of our own school population to a higher level our young people will lose out to countries that do.

The developing world is already generating a steady stream of highly skilled workers, not just for their own countries but also for ours. Over half of the nearly 16 million highly skilled expatriate workers in the four main destinations (US, Europe, Canada and Australia) have originated from outside the OECD area.[51] We need to increase the percentage of our young people who are achieving highly if they are to remain competitive. A CBI survey found that over a third of employers are already looking to fill science, technology, engineering, and mathematics (STEM) positions with graduates from India, China and Europe – not Britain.[52] In all, international students – who provide a lucrative source of income for higher education institutions – make up 15% of our students, most of whom originate from China (47,035) and India (34,065).[53]

> "The theory says it's possible to have more people achieve highly – other countries are doing it already and we cannot afford to lag behind"

In an increasingly global world we cannot live in isolation. Other countries are being more ambitious about what they think can be achieved in education. If we don't start to focus more seriously on the nurturing of high performance in our schools then we will disadvantage our own population, with all the social consequences that may bring. The theory says it's possible to have more people achieve highly – other countries are doing it already and we cannot afford to lag behind.

A fairer society leads to more contentment

We will definitely need to capitalise on the capabilities of a wider group of potential high performers if we are to meet the requirements of the labour market. The proportion of jobs needing

51 OECD (2005) Science, Technology and Industry Scoreboard 2005, p.9. Available http://www.oecd-ilibrary.org/docserver/download/fulltext/9205071e.pdf?expires=1297959334&id=0000&accname=guest&checksum=77E14E96CC667D48A566FD96AB4B4A18

52 CBI News Release, 17 April 2008, *OVER HALF OF EMPLOYERS DON'T THINK THEY CAN FILL SKILLS GAPS – NEW CBI SKILLS AUDIT.* Available http://www.cbi.org.uk/ndbs/press.nsf/0363c1f07c6ca12a8025671c00381cc7/91f2730166cad25d80257420004fe11e?opendocument

53 Ibid., Tables 2 & 3

higher level skills keeps growing and the low-skilled jobs which employed large numbers of British people historically are becoming mechanised or moving overseas where labour is cheaper. We need to unleash the abilities of a wider group.

> *"If there is not sufficient access to higher education across universities and colleges of all types, the socially mobile, highly skilled workforce that lies at the heart of government's ambitions for a globally competitive economy and a cohesive and equitable society will simply not materialise."* [54]
>
> Sir Martin Harris

So, while most agree it needs to happen, how to make it happen is much less clear cut. Some opt for the traditional routes of rescuing a few more pupils, as we did with Grammar Schools, but this simply tinkers with the problem. We need to be more ambitious. The 'rescue mentality' does not promote aspiration. Instead, the focus turns to 'making the cut': who is in and who is out. The result is discontent and a sense of unfairness. What we need to think about is allowing our people to compete with others in other countries, not just with each other. A micro-preoccupation with 'who is in and who is out' is irrelevant if other countries outperform us and gain competitive advantage on us in every area. It matters that we have more people achieving highly and it matters than we can continue to expand that talent pool.

Social mobility of the kind we need will never be significantly realised unless we raise our general level of expectation. The pre-occupation with family background that stops us realising a high-performance agenda does not exist in the same way in systems with the highest levels of educational attainment. In the highest performing systems the idea that a child might come to school already irretrievably socio-economically disadvantaged is not accepted. The

54 OFFA (2010) *What more can be done to widen access to highly selective universities? A Report from Sir Martin Harris, Director of Fair Access*, p.15. Available http://www.offa.org.uk/wp-content/uploads/2010/05/Sir-Martin-Harris-Fair-Access-report-web-version.pdf

assumption is that any child could achieve highly until he/she fails to do so. Even then all hope is not abandoned. Except in a very small number of cases, obstacles are seen as surmountable. In Hong Kong, for example, the vast majority of students regularly reach standards we would consider cognitively advanced, and the idea that family background is particularly relevant to educational achievement is scorned. "In a fast changing world where many jobs didn't exist when your parents were at school, what your parents achieved educationally is of little significance for the new, global, digital, generation."

We need to take action now to move our education system from being one where relatively small numbers of affluent and advantaged pupils do really well, and towards a system that supplies significant numbers of high performers from all classes and backgrounds into the higher education and job market.

5. An Approach Based on High Performance Has Already Been Shown to Work

> *"Last week, in Maths, one of our teachers (who is generally very groovy) was doing the expected grades routine. She said, "And I want As! As from all! 95% for C1" and as I was walking outside she said "And I want 98% from you, Rebecca!" And I was very pleased. I was tempted to moan about it and be all fitty-inny, but I cannot lie, as I am pleased to have someone actually believe in me."*[55]
>
> NAGTY Student

This 'nurturing high performance' approach has already been tried in England (but unfortunately not sustained) and is happening in an increasing number of countries around the world. Hence the vision of reform set out in this paper is not a pipe dream. It is practical, realistic and attainable. This chapter looks at the experience of the National Academy for Gifted and Talented Youth which operated in England between 2002 and 2007 and at how this model has now been taken forward in places as diverse as Saudi Arabia and Hong Kong.

Lessons from NAGTY

Sometimes a small innovative initiative can provide a potential blueprint for transforming the educational landscape. NAGTY achieved this in its five year lifespan and set out a roadmap for what

55 Private interview

might be achieved through a well-structured focus on high performance in the future.

NAGTY was set up by the government to provide advanced opportunities for the top 5% of pupils in secondary schools and many students in this cohort benefitted significantly from its work. It helped those pupils to achieve highly in their school, gain in intellectual confidence and compete for places in leading universities.

But NAGTY's main achievements were not for the cohort it served, but rather the development of a much better understanding of the routes to high performance and how to maximise them in individuals in the wider education system, plus the creation of structural models that might make this realisable.

This was the first time that a country had created a 'national centre for high performance' along the lines of sporting centres of excellence. It was a unique learning laboratory which could explore the routes to high cognitive performance. It is likely that the selection of a cohort is not the best way to structure such a national centre, but this first attempt showed what might be possible.

Findings from work and research at NAGTY suggest that:

1. Students can learn to take more control of their learning and so play a more significant role in determining their educational outcomes.
2. Not all learning happens in school and well-structured 'informal' learning can make an important contribution towards attainment at high levels.
3. Socio-economic background and/or attendance at a low achieving school does not have to be a barrier to academic success.
4. Many schools routinely underestimate the capabilities of their students and fail to provide sufficient intellectual challenge.

5. A school system where the only educational dialogue is around examination scores is not the best way to achieve high examination scores or advanced cognitive performance.
6. Parents from all family backgrounds want to support their children but some are better informed than others about what to do.

Background

NAGTY was established at the University of Warwick in 2002, by the then Labour government, to drive forward improvements in education for gifted and talented young people in England. On an annual budget of £4.75m, NAGTY was given a particular responsibility as guardians for the development and progression of the national top 5% of the population aged 11-19. As part of the government's wider gifted and talented strategy it also acted as a catalyst for developing understanding in the teaching profession, by supplying academic and professional expertise to national policymakers and school practitioners.[56]

The NAGTY Student Academy comprised 200,000 students aged 11-18 and drawn from schools and colleges across England. Students were deemed to be amongst the top 5% of students in state and independent schools. With an almost equal percentage of boys and girls this initiative was primarily aimed at state school students but access was not restricted to just them and approximately 8% of its cohort came from independent schools.[57] The Student Academy was focused on informal learning opportunities, creating a virtual community and providing online and face-to-face activities for students across the country in a variety of subject domains. Its flagship activity was the annual summer school programme for 11-16 year olds based at five leading universities. The Student Academy provided a unique insight into how best to develop advanced cognitive performance in the brightest students. The NAGTY professional arm worked with schools in England to improve in-school provision for gifted students.

56 NAGTY Annual Report 2004-2005

57 Campbell, R.J., Muijs, R.D., Neelands, J.G.A., Robinson, W., Eyre, D., and Hewston, R. (2007) The social origins of students identified as gifted and talented in England: a geo-demographic analysis. *Oxford Review of Education*, 33(1), pp.103-120

Students can make it happen for themselves

The most important outcome of NAGTY for students was the way in which it helped them to see what needed to be done in order to achieve advanced cognitive performance. It made the process transparent and allowed students to take matters into their own hands. Unlike many schemes for the gifted, it was not focused merely on advanced course provision but on helping individuals to understand how to achieve their ambitions.

> *"I joined NAGTY when I had just turned 13. When I found out I had been accepted, I was incredibly excited. The first thing I did was apply for maths Summer School at Canterbury. I thoroughly enjoyed the whole three weeks. The independence, the friendships and the challenges meant that I was very sad to leave!! Since the beginning, NAGTY has been a major influence in my academic and personal life. I love NAGTY activities. The opportunities have been tremendous and I have grown in confidence and self-esteem. Summer School really is a lifechanging experience… and… Outreach events are a great source of enrichment and fun. NAGTY has put me in a position where I am able to organise my own future instead of being restricted to what my school would normally offer. It has also opened doors for me, so that I have been able to make contacts and take advantage of many different opportunities. NAGTY has made me realise how enjoyable learning can be. It has broadened my horizons, changed me as a person and given me the confidence to realise that I can make a difference."*[58]
>
> London and South East Student Council Member

It was already known from the international research that for high performance to be developed individuals needed to:[59] have personality characteristics conducive to concentration, be open to

58 Private interview

59 Czikszentmihalyi, M., Rathunde, K. and Whalen, S. (1997) *Talented Teenagers – The roots to success and failure*. Cambridge: Cambridge University Press

new experiences, understand the work habits required, be prepared to make some sacrifices in terms of time spent at leisure and enjoy the intrinsic and extrinsic rewards that success can bring. NAGTY placed these values at the heart of its work and its pedagogy. What was surprising and encouraging was the value students placed on having this kind of understanding of the options available to them and just how powerful that knowledge proved to be at school and in informal learning.

Social mobility is possible on a large scale and changing schools is not the only route

NAGTY students became socially mobile regardless of their school. Once enrolled, gifted students from socio-economically disadvantaged backgrounds developed the same aspirations, motivation and self-esteem as any other gifted student. Annual surveys of students leaving NAGTY demonstrated that regardless of school or socio-economic background, students who joined would be likely to move on to a leading university. Once they joined a community of high achievers students from disadvantaged backgrounds went on to achieve highly. This has significant implications for the wider system as it suggests that pupils do not need to move schools in order to achieve highly if support can be offered elsewhere. By 2007 NAGTY had 30,000 students from the lowest socio-economic backgrounds destined for high academic attainment. These students had not changed schools or family – they had simply learned *how* to do well.

> *"Our daughter is noticeably more confident and enthusiastic about her work. (She) is realising that she does have the ability to do well and is not afraid of hard work."*[60]
>
> Parent of NAGTY student

60 NAGTY Annual Report 2004-2005

Table 2: Top ten NAGTY alumni universities 2005-2006

Destinations	Subject choices
1. University of Cambridge	1. Medicine/Pre-Medicine
2. University of Oxford	2. English Language and Literature
3. University of Warwick	3. Engineering
4. Durham University	4. Law
5. Sheffield University	5. Mathematics
6. University of Leeds	6. Modern Foreign Languages
7. University of Nottingham	7. Art and Design
8. University of Bristol	8. History
9. University of Manchester	9. Physics
10. Newcastle University	10. Economics

For example, NAGTY recognised that the cultural capital advantages of being exposed to academic debate every mealtime at home cannot be replicated, but that you can get around it. Through NAGTY's online study groups, students were exposed to discussions which they would not have routinely encountered at home: Anthropology, Archaeology, Astronomy, Ethics and Philosophy, Climate Change, Engineering Design Challenge, Robotics, and Design for the Web to name a few. Digital technology provides the mechanism to create communities which can link students to academics in an informal but structured way and can be used to recreate this collegiate discursive environment. NAGTY had a wide variety of online academic study groups that students could choose to join and many did.

Not all learning happens in school: pupil achievement can be enhanced by access to well-designed out-of-school 'informal' learning

The Student Academy created a pedagogy for out-of-school informal learning based on a set of advanced cognitive performance characteristics. The opportunities helped students to acquire not only advanced subject knowledge and skills, but also the learning values,

attitudes and attributes associated with high cognitive performance. It also encouraged schools to see this additional learning enhancement as a bonus, rather than a threat, and invited teachers to get involved as and when they chose. The best schools – both high and low performing in terms of school league tables – used this facility as a way to lever up expectations and performance in their own school.

Linking students to experts was at the heart of the NAGTY pedagogy. Experts are demanding and they demanded much of the students, but rather than this being off-putting it proved part of the attraction. It allowed students to become enthused and see learning as exhilarating rather than tedious. This caused them to strive.

But mobilising informal learning opportunities on a large scale also provided a mechanism for business, arts and cultural organisations and universities to make a meaningful contribution to education. The Royal Shakespeare Company, for example, wanted to make a limited but targeted contribution to education. NAGTY provided a useful vehicle. The numbers of external bodies keen to support school-aged learning proved considerable and, with appropriate guidance, new providers such as Chatham House and JCB were as keen to contribute as the more traditional museums, science centres and universities.

Six Key Elements for Informal Schooling

1. A focus on the learner and the process of learning
2. Access to tutors with specialist and cutting edge expertise
3. A learning model whereby the learner is apprenticed to the expert
4. An environment which fosters peer learning amongst students performing highly
5. Access to sophisticated and specialist facilities that students are able to use under expert guidance
6. A learning environment where students are able to self-pace and self-select their learning, giving a feeling of independence and ownership

Headline Figures 2005-2006 Student Academy

- Over 13,777 places created for gifted and talented young people across the country
- 584 days of high quality provision secured through partners
- 364 face-to-face programmes (over 150 at Higher Education Institutions)
- Over 4,500 places on NAGTY partner programmes

Informal learning for school aged students has significant educational value and is motivating and affordable. We have yet to exploit its potential. But informal learning is not just a question of giving students opportunities outside of school, as these tend to be patchy, unconnected to schools, dependent on the resources in your area (so can reinforce social mobility) and tend to be seen as a 'nice day out' rather than building a culture of high expectation. NAGTY provided an alternative model where out-of-classroom activities were carefully designed to make a serious contribution to high performance. They were the cognitive equivalent of the competitive athletics club or the youth orchestra.

Schools can expect more from their students

NAGTY students were clever, but they were also generally a well-adjusted cohort who liked school, had lots of friends and did well. They were a diverse group in terms of interests and typical teenagers in terms of angst.[61] What was clear was that, regardless of whether they were socially and emotionally confident, they became academically confident by engaging with NAGTY and that gave them the capacity to take intellectual risks and be open to new ideas. They tackled very demanding activities in summer school and online sessions and seemed to relish the challenge.

Their views on school chimed with the evidence from HMI and Ofsted which found that a lack of intellectual challenge to be a consistent feature in lessons in many schools.[62] Some 46% of students

61 Mazzoli, L., Campbell, R.J. and Muijs, R.D. (2006) *What's so different about Gifted and Talented Students? Gifted and Talented Students and Psychosocial Adjustment.* NAGTY Occasional Paper 14. Available http://nationalstrategies.standards.dcsf.gov.uk/downloader/42deb29015c7b7be7c5477b57f3ec100.pdf

62 Campbell, R.J., Eyre, D., Muijs, R.D., Neelands, J.G.A. and Robinson, W. (2004) *English Model of Gifted and Talented Education – Policy, context and challenges.* NAGTY Occasional Paper 1. Available http://nationalstrategies.standards.dcsf.gov.uk/downloader/e895dd8f6125ffa4c9ff3a6378a1d10b.pdf

found their school work too easy and 42% found their schooling boring.[63] It was obvious that some students had rarely been challenged academically in school. This resulted in them being ill-prepared to strive and persist – they could do more and knew that what school offered was sometimes not enough to be challenging or indeed stimulating. But some schools get this right and what can be done in some can be transferred to others. We now have, through NAGTY, a better documented understanding of what high performance looks like in practice and how to encourage it in various contexts.

Table 3: Financial statements – accounts for NAGTY

Sources of income	Year ended 31 March 2006	Year ended 31 March 2005	Year ended 31 March 2004
DfES Grant	£4,750,000	£4,750,000	£3,000,000
Fees income	£688,023	£601,437	£322,958
Philanthropic giving	£676,612	£206,819	£96,596
Total income	£6,114,635	£5,558,256	£3,419,554

After five years of success, NAGTY came under new management and changed its focus. In the years that followed gifted education began to lose its momentum and drifted. But the lessons learned remain: a national focus on nurturing high performance can benefit students, increase social mobility, and raise standards more quickly than the conventional standards agenda. This approach was not about rescuing a few poor students from disadvantaged schools. It was about stretching gifted students from a wide range of backgrounds whilst keeping them in mainstream schools. NAGTY provided a glimpse of what is possible. An approach developed for a specific programme with a remit to support a limited cohort (top 5%) could deliver much greater impact if more widely applied. The NAGTY approach generated widespread interest internationally and some countries are using it as a means of achieving high performance across their education systems.

63 Campbell, R.J., Mazzoli, L., Hewston, R., Muijs, R.D and Eyre, D. (2006) *Engagement with school, identity and self-esteem – Some characteristics of gifted and talented students in England*. NAGTY Occasional Paper 11. Available http://www.nationalstrategies.standards.dcsf.gov.uk/downloader/bfdec298adc4c56d5dd2b289ac88bbcb.pdf

How other countries have applied the lessons of NAGTY

The idea of a more holistic approach than that offered by traditional gifted education programmes is attractive to many countries and especially to those looking to accelerate their progress towards economic dominance at an international level. England pioneered thinking in this area and was the first, through NAGTY, to create a national centre of excellence and the practical educational models that could make this objective realistic. Hence international interest in this work is considerable.

> *"Yours seems to suggest a very promising model for other national programs. At this relatively early stage... of our development, we're of course interested in everything you're doing ... and would very much like to explore possible ventures with NAGTY."*[64]
>
> Ngarmmars Kasemset – Director,
> Thailand National Center for the Gifted and Talented

Post-NAGTY, the 'nurturing high performance' approach has become increasingly popular internationally and has been adapted for use in a number of countries and by institutions as diverse as the Raffles Institutions in Singapore and Witwatersrand University in South Africa.

Two of the first places to take forward 'nurturing high performance' in their own education systems were Hong Kong and Saudi Arabia. These two very different countries are at different stages of national educational development and seeking a step-change in their education system for different reasons. Hong Kong already performs in the top five of the world's best performing school systems[65] while Saudi Arabia has moved in the last 30 years from a literacy rate of 33% to one of 83% and rising.[66] The common factor is ambition in terms of education policy and a recognition that moderate educational competence is no-longer sufficient as an educational objective.

64 Private interview

65 McKinsey and Company (2007) McKinsey and Company (2007) *How the world's best-performing school systems come out on top.* London: McKinsey and Company. Available http://www.mckinsey.com/App_Media/Reports/SSO/Worlds_School_Systems_Final.pdf

66 Figures from The World Bank's World Development Indicators Database. Available http://data.worldbank.org/data-catalog/world-development-indicators

> *"Every nation faces the challenge of developing an education system that produces good people. The 20th century saw the dawn of widespread education, and for the first time the majority of the world's population learned to read and write. Now the stakes are much higher. Teaching literacy is no longer enough; we must teach individuals to think, to imagine, to invent, and to dream. Channelling innate curiosity into bettering the human condition is an admirable goal, but at the next level we must foster an entire nation's ability to compete on a global scale."*[67]

The Kingdom of Saudi Arabia's approach to nurturing high performance and creativity (Mawhiba)

Saudi Arabia (KSA) has designed and is implementing the most comprehensive educational approach in the world to nurturing high performance and creativity. Its reasons for doing so relate to a desire for rapid advancement in the development of the country. Like other countries, the requirement is for strong subject knowledge and the creativity that will enable innovation as well as efficiency.

> *"A creative society with a critical mass of gifted and talented young leaders who are innovative, highly educated, and well trained to support the sustained growth and prosperity of the Kingdom."*[68]
>
> King Abdulaziz and his companions
> Foundation for Giftedness and Creativity KSA

KSA believes that it is most likely to develop this critical mass not through selection of a few students and special programmes or schools, but rather through the high performance approach – through the creation of high expectations in school, coupled with systematic nurturing of the advanced cognitive performance

67 Ogilvy, J. (2008) *The Competitiveness Review – The Education Sector in Saudi Arabia.* Saudi Arabia: Saudi Arabia Strategic Investment Authority (SAGIA) p.7. Available http://www.sagia.gov.sa/Documents/Download%20center/SAGIA%20Publications/NCC_Education_Sector_Report.pdf

68 www.mawhiba.org

characteristics in students. By introducing advanced cognitive performance from an early age they expect to ensure that those with the capacity to excel will do so.

Structurally this initiative is the brainchild of a group of highly influential people drawn from a range of communities including religious, business, academia and government who hope over time to transform the KSA's education system. Working with a leading international management consultancy[69] they developed a five year strategic plan and commissioned work on both formal and informal learning, using the Director of NAGTY's model[70] as their design blueprint and localising for the KSA context. This is a two pronged approach with the mobilisation of both in-school provision and out-of-school informal learning opportunities.

> "KSA believes that it is most likely to develop critical mass not through selection of a few students and special programmes or schools, but through the creation of high expectations in school, coupled with systematic nurturing of the advanced cognitive performance"

The informal learning offer operates on a national basis using a range of providers, in differing venues and online and in a very similar way to NAGTY.

For the in-school model, which is the main focus of the KSA work, Mawhiba commissioned a UK based international education company as their delivery partner.[71] The school-based model allows, on an annual basis, a limited number of good schools to enter the Mawhiba Schools Partnership as a result of a competitive process. Member schools the school undertake a change programme designed to help them become more effective in nurturing advanced cognitive performance. Each selected school has access to an Advanced Supplementary Curriculum in maths, science, English and ICT (which is operated alongside the national Ministry of Education curriculum), a bespoke training programme, on-the-ground professional support and additional materials. School progress is reviewed annually and schools can compete for recognition at

69 McKinsey and Company

70 Eyre, D. (2009) The English Model of Gifted Education. In: Shavinina, L. (Ed.) *The International Handbook on Giftedness.* Amsterdam: Springer Science & Business Media. pp.1045-161

71 Nord Anglia Education

Partner or Advanced Partner level. Teachers have a similar incentive scheme aimed at generating increasing numbers of teachers who are outstanding at nurturing high performance. The theory here is to secure the model and gain advocacy in schools before then rolling out the programme over time. The requirement for schools to compete for entry is novel and ensures both commitment from the school and prestige for the approach. Schools serving secondary or primary aged children can be admitted into the partnership.

Funding for this comes from a mix of government and philanthropic sources. The funding demand is front loaded with investment in structures, materials, personnel and processes. This enables the creation of the Advanced Supplementary Curriculum and accompanying Annual Assessment Process which records the progress of individuals on this advanced work in addition to the normal national progress measures.

The Hong Kong Approach to nurturing giftedness

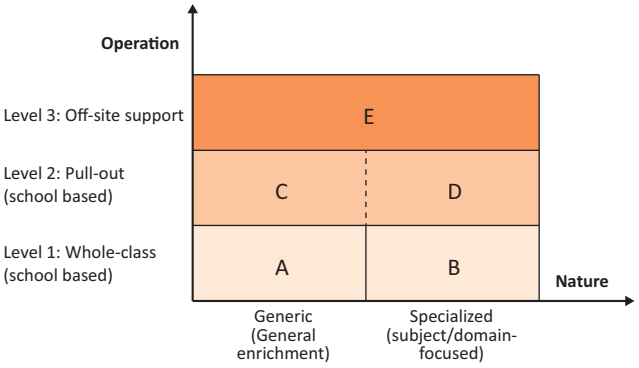
The Hong Kong education system by contrast is already hugely successful against the international system benchmarks[72] and outperforms the UK. It does well for its students, but it is not complacent. In responding to the 2007 international benchmarking data, the Deputy Secretary for Education (Chris Wardlaw) asked whether Hong Kong is heading in the right direction.[73] His view was that they could not afford to stand still, they needed yet higher standards and better learn-to-learn capacities to be expected of students.

The Hong Kong rationale for taking forward the 'creating high performance' agenda was that although their system created large numbers of students with high level subject knowledge – especially in maths and science – they needed to convert that high level subject knowledge into more rounded and usable advanced cognitive performance. Only then would their students be able to perform optimally in 21st century adult life and workplaces.

72 OECD's Programme for International Student Assessment (PISA)

73 Hong Kong Education Bureau Press Release, 26 December 2007, *International benchmarking of Education: Hong Kong is heading in the right direction.* Available http://www.edb.gov.hk/index.aspx?nodeID=6359&langno=1

Figure 2: Gifted Education Provision in Hong Kong



In 2000 they adopted a three tier model for the development of high performance, very similar in nature to the Eyre Model.[74] This structural model located gifted provision at a variety of levels within the school system but did not specify the recipients of such provision.

In 2006 Hong Kong decided to create a Hong Kong Student Academy. In 2007, following visits to NAGTY, Hong Kong set up its Hong Kong Academy (HKAGE) with a very similar remit to that of the NAGTY Student Academy.[75] Its role was to provide a co-ordinated response to Level 3 (informal learning) provision. HKAGE was established, like NAGTY, as a public-private partnership, but with the advantage of a HK$100 million philanthropic donation from a leading Hong Kong businessman. A deliberate decision was taken to allow this new body to be operated independent of government machinery and to create its own business model. An organisation supported in principle by government, but freed from government interference has proved a better basis for development of out-of-hours provision than the part government-directed NAGTY or its fully government-directed successor 'Young Gifted and Talented'

74 Hong Kong Education Bureau, Education Commission Report 4, http://www.edb.gov.hk/index.aspx?nodeID=4157&langno=1

75 HKAGE, About Us, http://hkage.org.hk/en/vision_mission.html

(YG&T), which operated unsuccessfully from 2007-2009. HKAGE appointed a British national from the UK as its director.

At the same time the Fung Hon Chu Gifted Education Centre was made responsible for Level 1 and 2 in schools and working closely with NAGTY began to mirror its practices. From 2007 onwards it has retained close contact with ex-NAGTY staff, including the NAGTY Director who acts as an ongoing advisor. Provision at school level is beginning to focus strongly on advanced cognitive performance at Level 1 and Level 2.

Perhaps the most interesting message from Hong Kong's experience is that it had already achieved what our standards agenda was aiming to achieve. They see the 'creating high performance' agenda as the logical next step in raising the performance of their education system and ultimately their economy. This is the kind of education system with which England will have to compete in the coming decades and we would do well to take note of the level of their education ambition.

6. Why Aren't We Doing this in England?

> *"The real problem is that teachers know that the more able students will get good grades in exams. The whole education system is based around 'value added' – the difference between a student's predicted and actual exam grades. Therefore there is no incentive to challenge students who are predicted good grades, as their results will not contribute to 'value added'."*[76]

Our future economic health is dependent on more young people achieving highly. Young people and their families want this same outcome and academic research tells us it is an achievable objective, so why aren't we doing it?

The reasons that this is not happening right now are a combination of out-dated beliefs about the nature of ability and academic performance, a national obsession with allocative 'fairness' in education, an inability to tackle social mobility and a well-intentioned but flawed rescue mentality which protects pupils from cognitively demanding situations and results in a reduction in aspiration.

We hold out-dated beliefs about the nature of ability and academic performance

It is a widely held belief in UK society that people are born with different levels of ability. Some will sail through school and some will

76 Private interview with school teacher

have difficulty achieving anything beyond the basics. In the middle classes these distinctions have come to be re-framed with some children described by their families as academic and others as 'practical' or 'creative'. Parents wait with baited breath to learn where their child will fall. We continue to believe that the numbers who have inherited the ability to perform highly are limited and that educational policy can only tinker with the margins. We believe it's all in the genes.

Yet as we have seen, we know the effect that the environment has on educational performance – it is well documented and overwhelming. The statistics tell us that the family environment into which you are born is the most reliable predictor of educational achievement, not your genetics. In 2006 only 45 successful applicants to Oxbridge came from the category of pupils receiving free school meals.[77] So environmental factors must be key – unless we conclude that the affluent classes have the monopoly on inherited 'good' genes?

We do accept that we can engineer a degree of improved overall performance in the education system – the raising standards agenda – but when it comes to the gifted we stubbornly hold on to the out-dated ideas of a separate sub-set of the population born with advanced inherited, definable, measurable and intellectual characteristics.

> "The reasons that this is not happening right now are a combination of out-dated beliefs about the nature of ability and academic performance"

Furthermore we institutionalise this belief. We put quotas on the numbers of students we think can be cognitively able. The gifted are the top 5-10%. Selective schools are the top 20-25%. Because we have this tradition, society feels more comfortable with norm referencing than criterion referencing. Having criteria referenced exams has led to a misconceived annual debate about whether an improvement in exam scores is the result of improved performance or 'dumbing down'. If ability is inherited then how can more people be getting good grades we ask?

Until we dare to believe that more people could attain highly, they never will.

77 Vaughan, R. (2010) *The year just 45 free-meal pupils got to Oxbridge.* 19 February. Available http://www.tes.co.uk/article.aspx?storycode=6036316

We mistakenly believe that the education system must choose between a system focused on nurturing the elite and a system that is effective for the majority

Most people would agree that the goal of our education system should be enabling each child to achieve their full potential. But instead of stretching all children and trying to increase the numbers of high performers in the system, the focus of high-level political debate in Britain has been almost exclusively on allocative fairness. For those on the political right, this tends to mean rigid meritocratic fairness: grammar schools and selection of 'the elite' into top universities. For those on the left, it's about demographically representative proportions of children 'getting through' at any particular stage. Both approaches have something in them, but fundamentally they miss the point because they are mired in a belief that the bounds of achievement are fixed. Accepting as a given that some people will succeed academically and some people will not, they obsess about ensuring that the 'right' people succeed. Two noble and principled preoccupations have turned the politics of British education into a series of vain attempts to design a system that fairly allocates success. The consequence is that we have assumed that the number of people who can succeed is fixed and have failed to focus on creating the conditions for greater numbers to succeed.

Recently we have been preoccupied with floor level targets; level 4 at age 11, A-Cs at GCSE and reducing the number of NEETS. We have created a system that requires that most pupils reach mediocrity and which asks schools to arrange their structures with this as the primary expectation. While this exists we will never be able to nurture high performance. It is well established that teacher expectation makes a difference. Over 40 years ago we recognised that[78] "When teachers expect students to do well and show intellectual growth, they do; when teachers do not have such expectations, performance and growth are not so encouraged and may in fact be discouraged in a variety of

78 Rosenthal, R. & Jacobson, L. (1992) *Pygmalion in the Classroom: Teacher Expectation and Pupils' Intellectual Development.* New York: Irvington Publishers.

ways".[79] We have chosen to settle for mediocrity in the education system and asked teachers to deliver it.

We are not nurturing high performance because we mistakenly believe that we cannot achieve both excellence and equity. We are always trying to be fair but sometimes this is at the expense of opportunity and excellence.

You get what you ask for: the effect of floor targets

In recent years UK education policy has been strongly focussed on the achievement of various floor targets. The 'headline' measure of school achievement published in annual league tables has been the proportion of pupils getting five good GCSEs (or their vocational equivalents). The headline measure was revised from five A*-C grades to five A*-C grades including English and Maths. There is much anecdotal evidence that this has led to an excessive focus on the 'D/C borderline', at the expense of higher and lower performers. Pressure for gaming is particularly intense in English and Maths.

In an ideal world performance measures would treat improvements in performance equally across the ability range: moving a pupil from an A grade to an A*, or from an E to a D would be considered as valuable as a move from a D to a C. But this is not the case at present. As one teaching manual – "*Boost your borderline students*" – helpfully explains: "Students who achieve a GCSE grade C or above in mathematics help to boost the school's statistics for the Department... and so show the school in a better light for Ofsted and for league tables... D/C borderline students are now an important focus for all teachers."[80]

The effect of this focus in recent years is now clearly visible in GCSE results for English and Maths. Almost all the improvement has been to move pupils scoring a D, E or F grade up to a C. While this is valuable, the proportion gaining an A*, A or B grade is

79 Rhem, J. (1999) Pygmalion In The Classroom. *National Teaching & Learning Forum,* 8(2).

80 Smith, D. (2007) *Boost Your Borderline Students: A guide to using Pearson Publishing's mathematics resources*. Cambridge: Pearson Publishing. p.1. Available http://www.pearsonpublishing.co.uk/borderline/WH_Boost_Borderline.pdf

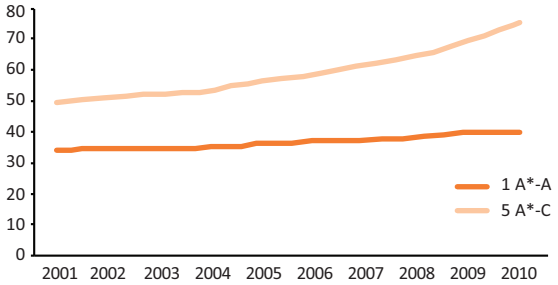
essentially unchanged. The floor target appears to have led to the neglect of potential high performers.

% of entries	Mathematics			English		
	A*, A or B	C	D, E or F	A*, A or B	C	D, E or F
2001/2	31.6	21.3	39.9	35.1	24.7	36.4
2009/10	32	26.5	34.3	25.5	28	33.2
Change	**+0.4**	**+5.2**	**-5.6**	**+0.3**	**+3.3**	**-3.2**

Some of the same effects appear visible in statistics for overall attainment. The proportion of pupils gaining five GCSEs or equivalent grades at A*-C rose from 50% in 2001 to 75.4% in 2010. The proportion achieving at higher levels has not shown anything like this dramatic improvement. For example, the proportion of pupils gaining at least one A or A* GCSE or equivalent grades rose from 34.3% to 40.5% over the same period.

Again, this suggests that the focus on the C grade may have come at the expense of attention on potential higher performers.

Proportion of pupils gaining five A*-C GCSE or equivalent grades versus at least one A*-A grade



A measure of achievement based on points scored (perhaps capped, or in a core of subjects) would be preferable as a lead

indicator, so that moving a child from an A to an A* is valued equally to moving him or her from a D to a C. This would replace the current five A*-C measure as the "leading" measure, although the existing lead measure would still be published. Alongside such a different lead measure, the government should also add data on high achievement to the annual school and college performance tables.

This would avoid the problems which the current floor targets appear to be creating.

We wrongly assume that large scale social mobility is unattainable

Most people are aware that education in England is more inequitable than in many developed countries.[81] The chances of a child who is eligible for free school meals – roughly the poorest 15% by family income – getting good school qualifications by the age of 16 are less than one-third of those for better-off classmates.[82] In 2010, after ten years of activity to widen access to universities, the gap in participation rates between the most and least disadvantaged remains significant: at 57% for the most affluent compared to 19% for the least advantaged.[83] The opportunity for children from lower socio-economic backgrounds to achieve outstanding academic performance levels is less than in other countries. We have come to believe that the problem is insurmountable – we do not believe that a significant proportion of disadvantaged children can do well. Hence, at a stroke, we reduce the overall numbers of potential high performers.

The mere fact that the link between high performance and socio-economic background is so well established has created another barrier to achieving advanced performance in schools. It has led to false inductive reasoning in which it is assumed that children from lower socio-economic backgrounds cannot reach high levels of cognitive performance. At the top end of the education system some academics

81 D'Addio, A.C. (2007), *Intergenerational Transmission of Disadvantage: Mobility Or Immobility Across Generations? A Review of The Evidence For OECD Countries*, OECD. Fig. 1, p.38. Available http://www.oecd.org/dataoecd/27/28/38335410.pdf

82 The Panel on Fair Access to the Professions (2010) *Unleashing Aspiration: The Final Report of the Panel on Fair Access to the Professions.* Available http://www.bis.gov.uk/assets/biscore/corporate/migratedd/publications/p/panel-fair-access-to-professions-final-report-21july09.pdf

83 HEFCE (2010) *Trends in young participation in higher education: core results for England.* p.5. Available http://www.hefce.ac.uk/pubs/hefce/2010/10_03/10_03.pdf

in leading universities are suggesting that it is all just too late. Students from low achieving schools have already missed out on too much educationally and so no-longer have what it takes to make it at the top level. Schools, too, reduce horizons by limiting access to top qualifications such as three separate sciences, the A level Extended Project or Further Maths on the basis that they will be too demanding for their students. Moderate or low achievement is being seen in some quarters as more-or-less inevitable for pupils from low socio-economic families. Getting above C grade at GCSE represents the pinnacle of success.

We incorrectly believe that we must protect pupils from cognitively over-demanding work

The 'nurturing high performance' agenda suggests that many people could achieve at the level once thought to be the preserve of a small percentage of gifted children. But for this to happen pupils have to be given the chance to become high performers. High performance is not effortless success. It requires pupils to grapple with difficult concepts, even fail from time to time, and then be permitted to try, and try again. Our approach to education does not currently encourage this. We take early signs of failure as indicators of a lack of ability and do not assume that they can be overcome. A child quickly learns "I'm just not much good at maths" rather than that "I am having difficulty now, but need to persevere".

Increases in the proportion of pupils defined as having minor special educational needs and schools moving away from offering demanding curricula are all part of a climate of false kindness that in some schools is leading to a lack of expectations and a culture of helplessness in pupils.

We cannot nurture high performance so long as we continue to think that asking children to strive to achieve is brutal and unkind. Until this is addressed we shall continue to lower our expectations for what they can achieve and consequently limit their horizons.

7. What Should We Do Now?

This report does not recommend an initiative or a programme, but rather a different focus for the education system. We need to focus on creating high performance in individuals. The last time we did something like this in the English education system was when we introduced the raising standards agenda in the 1980s. Prior to the introduction of the raising standards agenda, the question of what schools were for was a matter of debate.[84] The primary purposes of schooling were less clear. The raising standards agenda suggested that whilst schools do many things, the most important thing that they do is to help children achieve academically. We wanted the system to do things differently and so we put in place systems to make it act differently – a national schools inspectorate, a national curriculum and standardised testing at 7, 11 and 14. Since then we have done much to tinker with the system, but we have not deviated from the key focus on standards. Now this standards focus seems so obvious it is self-evident. Through the last 25 years we have developed a cross-party consensus on this agenda.

But in this paper I have argued that the raising standards agenda, whilst valuable and necessary, has outlived its usefulness. The overall performance of our education system has improved over the last 30 years. However, the system has consistently failed to achieve a step-change in performance levels and now other more aspirational systems are overtaking us. This is because the raising standards agenda focuses on raising *average* performance. We need to create the conditions for more individuals to reach *advanced* levels of cognitive performance. Accordingly I make the following recommendations:

84 The Great Debate, James Callaghan, Ruskin College, Oxford, on 18 October 1976. Available http://www.educationengland.org.uk/documents/speeches/1976ruskin.html

1. It is time to move beyond the raising standards agenda – it has served its purpose but we now need to be more ambitious for our children and our country. We need a change of a similar type and of a similar scale but one where we shift the focus towards high performance – we need to nurture high performance in our pupils. The raising standards agenda institutionalised mediocrity, making its goal the proportion of children leaving school with adequate skills as measured by GCSE exams. We now need to institutionalise excellence and help as many pupils as possible reach high performance at 18. Government needs to build a consensus for this approach throughout the education system.
2. Set clear expectations for the system but trust professionals to decide how best to nurture high performance. The methodologies that helped us to reach mediocrity (national targets, expensive national field forces) will not help us to reach excellence. To quote Joel Klein, "You can mandate awful to adequate, but you cannot mandate greatness; you have to unleash it."[85] So I propose that the outcomes required in the system are made very clear but that the detailed methodologies for achieving them are left to the education providers and especially to the schools. The word education comes from the Latin *educare* – to lead out. We must permit our teachers to draw out the ability of individual pupils, not just help them meet crude assessment targets.
3. Reframe the national levers to ensure a focus on high performance:
   - A National Curriculum that expects advanced cognitive performance and places a value on advanced subject knowledge, high level skills and the values, attributes and attitudes associated with expertise in a given subject domain.
   - Qualifications reviewed to prioritise and reward high performance. We need a qualification framework with

85 Joel Irwin Klein (born October 25, 1946) is the outgoing Chancellor of the New York City Department of Education

intellectual rigour within an options framework. It should expect pupils to stay in learning until 18. The education system at Key Stages 1-4 should focus on what children will achieve at 18 and beyond, not at 16. Qualifications should offer more opportunities to demonstrate advanced performance features e.g. extended essay type options.

- An Ofsted framework revised to judge the school's ability to nurture high performance as the main criteria of school quality – not through an additional tick box, but through a complete gear change in what inspectors look for in a school.
- Abolish targets based on the average and instead make more transparent at school, local authority and national level how many children are achieving at advanced levels. Top schools in both the state and independent sector do this already – celebrating their pupils' university destinations and real-world achievements, not just exam scores.
- Current 'cliff edge' performance measures based on the number of pupils scoring above a D at GCSE create distorting incentives to focus on the 'D/C borderline'. A measure based on points scored (perhaps capped, on in a core of subjects) would be preferable as a lead indicator, so that moving a child from an A to an A* is valued equally to moving him or her from a D to a C. This would replace the current five A*-C measure as the 'leading' measure, although this data would still be published.
- Alongside such a different lead measure, the government should also add data on high achievement to the annual school and college performance tables. Newspapers such as the *Financial Times* independently publish school-by-school data on the percentage of entries in core subjects which are awarded an A* grade. The government should also publish this data for GCSE and A levels.

4. Schools should move away from the current marginal Gifted and Talented agenda, with its narrow focus on small numbers of pupils seen as having inherited measurable characteristics, and adopt the more contemporary human capital approach to the systematic nurturing of high performance. We know that good schools can create high performance in many of their pupils. This should be the primary focus for all our schools – not just passing exams, but the creation of well-rounded individuals equipped to excel as adults. Schools should raise their own expectations. At school level, this does not necessarily require additional resources. It could be achieved through a change in attitude (which costs nothing) and reprioritisation of existing resources.
   - Schools should be required to offer advanced learning opportunities as the norm and routinely expect large numbers of pupils to perform highly on them. These should be offered in class and through selective enrichment or extra-curricular activities.
   - Schools should decide how best to strike the balance between teaching that stretches the whole class and subject-specific setting, but there should be an end to 'pitching at the middle' on the one hand and inflexible setting and streaming on the other.
   - Schools should make transparent to pupils and their families what is known about routes to high performance and harness the support of parents, mentors and families. In sport, elite performance is characterised by a combination of access to increasingly advanced opportunities, good coaching, individual aspiration and family support; all this building on a strong platform of early and frequent opportunities to learn the basic skills.
   - Each pupil should have an assigned member of staff with responsibility for monitoring their progress and coaching them towards high levels of performance, even if this

means slightly bigger classes or less money for material resources. The pupil premium could be used to fund additional coaching and support for pupils less likely to gain this at home.

- School culture and ethos must that stress hard work is just as important as inherited ability in achieving success. In Hong Kong and China children are brought up to believe that if they work hard at school they will do well. They see that their educational outcomes are in their own hands, rather than dependent on their inherited genes. We must help our own pupils to think the same and not be cowed by socio-economic disadvantage or social class. Schools should encourage pupils of all ages to take responsibility for their work and learn the habits of success.
- Through the school, pupils should be directed towards out-of-school informal learning opportunities offered by universities and other providers. which help them develop their interests and aspirations. Schools should take some responsibility for ensuring suitable take up by pupils in their schools – especially amongst traditionally low-performing ethnic and socio-economic groups.
- Schools should be encouraged to recognise, reward and celebrate high achievement in their pupils through awards ceremonies etc. – so as to signal its value. Success is important as a key motivator, memories of it help sustain a positive ethic when things get tough.

5. Increase the importance of informal learning opportunities. In the 21st century, learning is not just confined to the classroom. This is not an aspirational statement; it is what is happening now. The system needs to exploit the possibilities offered by informal learning and recognise the contribution it can make to securing high performance. In particular, it needs to look at the possibilities offered by providers other than the school and see them as a key part of the learning landscape. Middle class families have always seen the value

of informal learning – we can enhance the offer to them and at the same time widen its availability to others. These do not all have to be free. Many parents are willing to pay and scholarship schemes coupled with the pupil premium could ensure full access.

- Encourage and accredit providers who want to offer specialist, out-of-school advanced learning opportunities in cognitive domains on a local, regional or national level (face-to-face or online).
- Create incentives for universities, private and third sector groups – including independent schools – to become more actively involved. Accreditation is an integral way of making this work because schools can only be expected to pay for opportunities they can be sure are worthwhile. Encourage pupils to get involved by offering recognition for engagement.
- Provide funding for low income families to participate.

6. Establish a 'National Centre for Advanced Performance in Education'. Building on the initial work of NAGTY, this centre would act as a catalyst for this work, making the case for a focus on high performance, offering advice at all levels of the system, providing training for teachers and out-of-school advanced learning opportunities for pupils and ultimately fostering the development of a self-sufficient sector to do this in the long-term.

Anyone who has recently worked with British children and British teachers knows that they are equal to the challenge set out in this paper. They possess a creativity and spark which is the envy of many other countries' educators. The challenge for policy makers is to create a system that unleashes high performance in pupils and creates the conditions for Britain to thrive in the future.

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Clutha House
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