Education reform in New York City (2002-2013)

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From 2002 until 2013 the city of New York was governed by Mayor Michael Bloomberg who, in his first State of the City Address, immediately after taking office, stated that "we must fix our school system" (Bloomberg, 2002). In the years that followed, NYC's education landscape changed dramatically: new forms of schooling were introduced in the shape of charter schools and small schools of choice; schools deemed to be failing were closed, often in the face of vitriolic public protest; and the structural hierarchy that permeated the Department of Education was reorganised and in large parts dismantled.

This paper will focus on the policy changes that took place in NYC during Bloomberg's administration, relating them to the changes in school outcomes that simultaneously took place within the city. Although it is difficult to show causation between the many policy initiatives that were introduced, it will draw links where possible. NYC's education reform is remarkable in many ways – not least because for 12 years, under one administration, sustained and coherent reform was able to take place unimpeded by the changes in political leadership that often blight such processes in other democratic territories.

The education system in NYC is of particular global interest: all public schools are overseen by one administration body (the NYC Department of Education (DOE)), which is the largest school system in the USA, and one of the largest in the world (Fullan & Boyle 2014, p. 21). There are over a million students in over 1800 schools within the city (NYC DOE, 2015a). Urban centres across the US (Rotherham & Whitmire, 2014; Kelleher, 2014), and the globe (Elwick & McAleavy, 2015), have learnt from the lessons of NYC and will undoubtedly continue to do so based upon the remarkable improvement in student outcomes that accompanied the Bloomberg reform programme.

Upon election, Bloomberg made taking control of the city's education system a priority – angling for increased authority in his inaugural address (McGinley, 2010, p. 306).

By June 2002 the State Assembly and Senate of New York passed a bill granting mayoral control over the city's schools, a decision that was reauthorized in 2009 and meant that Bloomberg was able to effect change in NYC's public school system more directly than any mayor of the city since at least 1969 (McGlynn, 2010, p. 294). This was key, both for the depth and also breadth of reforms that took place – freeing Bloomberg, and subsequently his school chancellors, from much (although certainly not all) of the bureaucracy that he blamed for the "inertia and resistance" that stood in the way of school reform (Bloomberg, 2002).

This paper uses a mixed methods approach, based on an analysis of secondary literature and data relating to the NYC school system between 2002 and 2013 and a series of qualitative interviews. It will not present a blow-by-blow account of the reform strategies adopted as these already largely exist (e.g. Klein, 2014; O'Day et al., 2011), but will instead consider what the key measures were in terms of their ultimate aim – improving student outcomes – and how these worked together. In order to do this, eight 'key witnesses' were interviewed, comprising those working at policy level (e.g. city and state education department officials), those working at school level (e.g. school principals) and academics working within the city who had particular insights. A condition of these interviews was that the participants would remain anonymous – allowing them to freely speak their minds regards what they believed had been the extent of the changes in NYC and which measures had been particularly successful (or unsuccessful). The secondary data analysis uses a variety of sources, including both academic papers and media/press reports from the period in order to contextualise the study. Quantitative data is used to understand the changes in student outcomes, based upon publically available datasets from the NYC DOE as well as the New York State Education Department, and the US National Center for Education Statistics.

While this paper will focus on the reforms that took place in NYC, the changes enacted in the city were almost all built upon evidence of success elsewhere in the world and

should be judged within the framework of wider international school reforms. After considering the quantitative evidence related to student outcomes in NYC, this paper will look at four areas of reform in particular, and will preface each by providing a short contextual summary of the wider evidence base.

Student outcomes

In order to judge the effects of reform in NYC, it is first important to look at the quantitative data around student outcomes, not entirely straightforward given the multiplicity of measures by which students are judged, as well as the fact that curriculum and assessment changes in New York and the US make it difficult to compare directly across the whole time period. In terms of a headline statistic however, I will first look at high school graduation rates – a nationwide measure which shows one of the most impressive improvements in NYC.

In Figure 1 it is possible to see that for ten years prior to 2002 there had been a stagnation in graduation rates in NYC, with virtually no long-term change in the percentage of students leaving school with a diploma (and that figure a depressing 50 per cent). Between 2002 and 2014 this rate increased, year-on-year, to reach almost three-quarters by the time Bloomberg left office at the end of his third term. At the same time, the percentage of students dropping-out of school decreased, from 20.0 per cent in 2003 to 13.5 per cent in 2014 (NYC DOE, 2014).

Figure 1

Using a different metric, the National Assessment of Educational Progress (NAEP), it is possible to compare NYC with other similar urban centres, and also with the wider state of New York. In the case of the former, NYC performs extremely well when stood up against 14 similar cities serving high-needs groups (Figure 2). Almost 80 per cent of NYC's students qualify for free or reduced-cost lunches (based upon their levels of poverty) (NYC DOE, 2015b) which makes such a comparison particularly useful given the weight of research

Figure 2

which shows a link between disadvantage and poor performance at school (e.g. OECD, 2013).

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Wong and Farris showed that on the NAEP assessment NYC made measurable progress on narrowing the achievement gap (for low-income students) (Wong & Farris, 2011, p. 230), although it should be noted that NYC's scores nonetheless fall well behind national averages on these tests (Disare, 2015). In contrast to NYC, only around 53 per cent of students in New York State as a whole are classified as economically disadvantaged (NYSED, 2015). Although New York State comfortably outperforms NYC on the NAEP tests, the city has improved at a much greater rate during the period 2003-2013 than either the state or the country as a whole (NYC DOE, 2013).

State-specific tests of maths and English show more of a mixed picture for NYC: the percentage of proficient students in the city rose steadily between 2006 and 2009, but then dropped significantly when the 'cut score' (the level at which proficiency was deemed) changed. The results then began to rise again, until 2013 when the exam was altered to reflect the new 'Common Core' curriculum – at which point proficiency rates dropped once more (NYC DOE, 2014b).

Reform one: leadership

Improving school leadership is a policy priority around the world (Pont et al. 2008); with evidence that, although not enough in isolation, effective leadership can lead to improved outcomes for students (see Day et al. 2016). Hallinger and Heck's review of research in 1998 included studies from as far back as 1980, and led them to conclude that principals did have a measurable effect on school effectiveness and student achievement,

Leadership reforms in NYC operated on two levels. Firstly Bloomberg made what were considered outlandish appointments at the very top of the DOE, installing political leaders with whom he would be able to work together – driving reform in the direction he had promised upon election. Secondly he addressed what he saw as a great injustice of the system

at school level: giving much greater freedom and authority to school leaders (principals) – in exchange for making them more directly accountable to the DOE.

In August 2002 Bloomberg appointed Joel Klein as NYC School Chancellor, Klein was a lawyer with no formal experience in the education sector and yet he had been given the most senior education position in the city. Together Bloomberg and Klein began to exert greater control over the system: "first centralizing authority to eliminate layers of red tape and establish citywide norms, and then devolving greater authority to school principals in exchange for greater accountability for the academic performance of their students" (Kelleher, 2014, p. 19). These changes, and the wider reform programme, were known as 'Children First' and, according to Klein, were driven by a "philosophy of change" (Klein 2014, p. 22). Change was pursued relentlessly by those in power. Eli Broad, when awarding NYC the Broad Prize in 2007,[1] said that in NYC "the strong leadership by the mayor, the chancellor, and a progressive teachers' union has allowed the nation's largest school system to dramatically improve student outcomes" (Medina, 2007).

Two of the former senior officials interviewed as part of this research both commented on the important role that political leadership and support provided to the reforms:

"Now we spent a lot of time, both at the mayor's level and my level, working with politicians, keeping them onside, sometimes you'd have to negotiate, sometimes you'd push harder than they might have liked" (former senior official at the NYC DOE).

"[Political support] is essential – the fact that the mayor was supportive, was willing to accept responsibility for public education in a way that previous mayors had not" (former senior official at the NYC DOE).

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[1] "Awarded each year to honor urban school districts that demonstrate the greatest overall performance and improvement in student achievement while reducing achievement gaps among low-income students and students of color" (The Broad Foundation, 2015).

At the school level, there is considerable evidence that school leaders play a central role in the success of high-performing systems (e.g. Slater, 2013). This was a view shared by Joel Klein in NYC, who described principals as: a "crucial piece in the education puzzle"; "key agents of reform"; and "the most important" factor in system-wide success (Klein, 2014, p. 61 & 184). This view was shared by many of those interviewed as part of this research:

> "The principal is the key leverage point in a large urban school district. And getting the best people you can find, supporting them, developing them [is crucial]" (former senior official in the NYC DOE).
>
> "I think if you don't have really good, strong principals, your schools are just not going to work well" (former senior official in the NYC DOE).
>
> "I don't think you can have a successful system without successful schools and you can't have successful schools without strong principals" (academic and former special assistant to the chancellor).

The Department of Education adopted a policy of decentralisation in order to make best use of these key agents. Eric Nadelstern, a member of Klein's senior team at the DOE suggested that "the more authority you share, the more influential you become" (Nadelstern, 2013, p. 18) and this view permeated the reforms that directly targeted school principals. The 'Autonomy Zone' (at first an opt-in pilot scheme, gradually rolled out to all schools) represented this increase in autonomy for school leaders, decentralising support networks and giving principals the choice of who they could affiliate to and buy support from, based upon their individual circumstances (Kelleher, 2014, p. 15).

Klein's retrospective view was that the principals went from being "the weakest players in the whole system" to become a positive force for improvement as they were gradually given greater control over their staff and their budget (Klein, 2014, p. 41). Klein's

background as a CEO may well have played a large part in his desire for principals to essentially become CEOs themselves (Rogers, 2009, p. 23). As a former DOE official said:

"They need the right to recruit, they need supports and they ultimately need the right to terminate teachers. You can talk about fair processes and all that, but controlling your human resources is number one. Number two, controlling your budget" (former senior official in the NYC DOE).

The same official then explained how a lack of autonomy in certain areas restricted decision-making in others:

"A simple example. People would say let's all have 22 to one class size. And so if you're a principal meeting that requirement may mean you end up with virtually no discretionary funds. Let's say you wanted to do an intervention program for struggling readers. And I was much more of the view: give principals budget based on a fair allocation formula and then let them decide. Give them control over their budgets" (former senior official in the NYC DOE).

As well as directly changing the level of authority and decision-making power that principals could exercise, the professionalization of school leaders was also addressed under Klein and Bloomberg. The NYC Leadership Academy was initiated, which would allow principals to make best use of their new-found freedoms.

The academy served multiple ends: "the initiative served to create a cadre of leaders loyal to the chancellor and his efforts to place children first… it also served as something of a wake-up call for those who directed university principal preparation programs that the future was not what it used to be" (Nadelstern, 2013, p. 7). Many of the candidates for the academy came directly from the school system, having previously been effective teachers (Nadelstern, 2013, p. 8). According to one of the officials interviewed the programme centred on:

"Solution driven training... how you deal with budget, how you deal with angry parents, how you get teachers who are resistant aligned with your mission, etc." (former senior official in the city education department).

By 2009, 15 percent of the total number of principals working in NYC had graduated through the Leadership Academy's 'Aspiring Principals Programme.' It should be noted that analysis by Gootman and Gebeloff has shown that the schools they were working in were less likely to perform well according to the city's own report cards (Gootman & Gebeloff, 2009) – however this may have been down to the fact they were less experienced than their counterpats, having only recently become principals.

Strong and effective leadership, both politically and at the school level, is often cited as one of the key factors in terms of wider school improvement at a system level (e.g. Leithwood et al., 2006). It is no surprise, therefore, that Bloomberg focused on this area as one of his major reforms during the 2000s. Although it is very difficult to quantify the effect that this had, it did underpin much of the broader reform programme during the period.

Reform two: accountability alongside autonomy

The combination of increasing both school autonomy and accountability is bound up in within the concept of self-managed schools, first proposed by Caldwell and Spinks in 1988 and subsequently built upon in a range of contexts, including in England (e.g. Hargreaves 2014; Gilbert 2012) and across the Asia-Pacific region (e.g. Caldwell 2003). In NYC, as well as giving school leaders more power, the deal that Klein and Bloomberg made with the principals was also based upon an increased level of accountability. All of the principals who signed up to the pilot Autonomy Zone "had a performance contract with the city" (former senior official in the NYC DOE); school inspections by external experts, known as 'quality reviews,' were introduced; and each school received a graded progress report based upon variables including school environment, student performance and progress (Kelleher, 2014, p.

22). This series of policies was designed to retain the DOE's role in accountability, while still allowing schools and principals the greater freedoms that the administration saw as key to school improvement:

> "What we were attempting to do was create networks that were autonomous as well and that loosely orbited the Department of Education for accountability purposes only" (former senior official at the NYC DOE).

Schools were benchmarked against each other, with data used to compare like-for-like schools based on their intakes (Nadelstern, 2013, p. 21). This allowed for a fair comparison between schools faced with similar challenges and echoed similar policy initiatives in London (Baars et al., 2014) and Rio de Janeiro (Elwick & McAleavy, 2015). As an interviewee noted, the move was akin to comparing:

> "Apples to apples on performance – meaning we didn't compare principals in high-poverty communities with principals in middle-income communities. We looked at comparable schools; we measured progress as the key variable" (former senior official in NYC DOE).

According to Klein, for the first time in NYC "people were getting information about kids and using it to help them improve" (Klein, 2014, p. 201).

The appointment of Jim Liebman to the role of chief accountability officer at the DOE accelerated the development of this new accountability regime: providing a greater range of data on individual schools, both in terms of progress and 'quality' – judged through the inspection visits which looked at leadership, classroom instruction, teacher practice and staff use of data to inform instruction (Nadelstern, 2013, p. 22).

As well as this move towards centralised accountability – from the principals to the DOE – there was also a layer of accountability created between the principals and the support networks that they could choose to utilise (as part of their newly-granted autonomy). In an

expansion of his Autonomy Zone, Klein introduced two measures that school principals could look to for support. School Support Organisations (SSOs) directly provided support services and principals could choose from which of these organisations they purchased their services (at first there were 11 of these, then consolidated down to five) (Shipps, 2012). Schools were then able to affiliate to a network of other schools, known as Children First Networks (CFNs) (Wohlstetter et al., 2013) for school-to-school support and to deal with the SSOs as a consortium. The market-place that Klein created meant that principals could essentially vote with their feet, abandoning poorly-performing SSOs or switching their affiliation if they thought they could get more elsewhere.

The combination of enhanced autonomy and accountability during the 2000s in NYC in many ways echoes a body of literature that has developed in the UK around the concept of the self-improving school system (e.g. Hargreaves, 2010). Christine Gilbert (who played a key role in the transformation of London's schools during the 2000s (Baars et al., 2014)) believed that "accountability in its broadest sense provides important support for school improvement and is more critical than ever as we move to establish a truly self-improving system" (Gilbert, 2012, p. 4). This line of argument was undoubtedly bound up in Klein/Bloomberg's thinking, along with the fact that Bloomberg explicitly made himself accountable to the public on education (Ravitch, 2003), and hence needed to maintain a close eye on the performance of individual schools within the system.

Reform three: structures & schools

Introducing new forms of government-funded school, increasing choice and competition within school systems, is often referred to as the marketization, or quasi-marketization, of a system (e.g. Walford 2000). Such approaches have been adopted since at least the late 1980s, when the first City Technology Colleges began opening in England (Whitty et al. 1998), followed by charter schools in the USA in 1992 (West & Bailey 2013).

This widespread introduction of quasi-markets has gradually altered the landscape of schools and school structures, particularly in industrialised countries (Walford 2000), with changes often explicitly intended to improve the educational outcomes of pupils from deprived inner-city areas (West & Bailey 2013).

On a structural level Bloomberg and Klein initiated a period of increased centralisation in NYC, removing layers of bureaucracy from the system, which later enabled them to devolve authority and responsibility more easily to the school principals (as previously discussed). Schools in the city had previously been accountable to district superintendents (Nadelstern, 2013, p. 15) and community school boards – a "top-down structure where superintendents could dictate a school's approach, even if it wasn't in the best interests of students" (Gonen, 2015). These powerful hierarchies were replaced with 10 regional offices, directly accountable to the chancellor, and with much less authority and power than their predecessors (Fullan & Boyle, 2014, p. 27).

Such changes were contested: Randi Weingarten, president of the United Federation of Teachers (UFT) asked in 2007 "how many more of these restructurings must we go through?" (Gonzalez, 2007) and in his analysis of school reform in NYC, Michael Fullan suggested that wider reforms in NYC were not entirely effective because of the overarching emphasis on structural issues rather than the deeper cultural issues: "restructuring has prevailed over reculturing" (Fullan & Boyle, 2014, p. 58). A school principal, interviewed as part of this research criticised the lack of clarity brought about through change:

> "When the mayor changed the power structur… there were other people who were almost lateral people who were your supervisors who you had to report to. In that, it created almost a sort of combative situation between people – 'Who am I actually reporting to and why am I reporting to someone who is less senior to me?'" (school principal).

As well as changing the higher-level structures into which schools reported, there followed significant changes to the structure of schools themselves. In perhaps the most radical reform of all (and certainly the one that drew the fiercest criticism (NYC Public School Parents, 2012)), Klein and Bloomberg identified underperforming schools and set about closing them. Aided by the accountability measures put in place by the DOE it became relatively straightforward to isolate the worst-performing institutions (based on the quality reviews, progress reports and feedback from teachers and parents) (Nadlestern, 2013, p. 22). Klein claimed that "at least 10 per cent [of schools] were chronically underperforming" (Klein, 2014, p. 78) – in all over 160 of NYC's public schools closed their doors at the behest of Bloomberg/Klein (Fertig, 2014), most of which were large high schools in disadvantaged areas. In order to maintain a supply of school places, the closed schools were replaced with a greater number of smaller schools, often co-located in the same buildings. These new schools were known as 'small schools of choice' (SSCs).

According to Eric Nadelstern (a member of the DOE administration) "the creation of a critical mass of new small schools was the single most important breakthrough strategy of the Klein administration" (Nadlestern, 2013, p. 33). More objectively, the evidence around pupil outcomes at these SSCs shows that they tend to outperform comparable schools. As a result of NYCs lottery system of place allocation ("a universal choice system that no longer tied students to local communities [but] allowed them access to any high school in the city" according to one of the interviewees) attendance at these schools was randomised and as such it is possible to make comparisons between students at SSCs and those at other district-run schools. As can be seen in Table 1, graduation rates in the SSCs were significantly higher and they "continue[d] to markedly increase high school graduation rates for large numbers of disadvantaged students of colour, even as graduation rates [were] rising at the schools with

Table 1

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which SSCs are compared," as were scores on the English Regents exam (Bloom & Unterman, 2013, p. 11). [2]

These newly created SSCs were entirely new organisations, with new bodies of staff, which was a key component in their success according to those interviewed:

"So the new schools really were entirely new organisations, which I think makes a real difference in terms of preserving the model and implementing it in a way that was distinct from the larger factory-style high schools" (former special adviser to the chancellor).

These schools were phased in slowly, admitting one grade at a time, which allowed them to ramp up to full capacity over a number of years (Klein, 2014, p. 78). The basic structural nature of these SSCs allowed them to succeed according to the interviewees:

"The first reason is they're simply easier to manage. It's very difficult to find people who can effectively manage a school of 5,000. It's much easier to find someone who can manage a school of 500... Whereas, if you have 400–500 kids in a school, then you have 20–25 teachers and they each have 20–25 kids in a class and that strikes me as the right ratio" (former senior official in the NYC DOE).

"Get rid of the lowest-performing schools, create new ones that were mission-driven, working at a scale that made it more feasible to address the needs of individual kids and then opening up the options for kids to be able to pick the places that were going to be the best fit for them and their families" (academic).

As well as creating SSCs (which were district-run schools) Klein and Bloomberg encouraged charter school organisations to open new schools in the city, further increasing choice and competition. Charter schools are public schools (free to attend) that have greater

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[2] The Regents exams are an end-of-high-school test in which a score of 75 or more is used to indicate college readiness

freedom to innovate (National Alliance for Public Charter Schools, 2015) as they are often supported by private financial backers and are not controlled by traditional school boards.

Charter schools are spread across the USA, and have achieved mixed results in general (National Alliance for Public Charter Schools, 2015) and often been criticised for robbing public schools of their most promising students (Winters, 2012), however those in NYC do seem to perform better overall than their district school counterparts. As can be seen from Figures 3 and 4, the percentage of students proficient (achieving levels 3 or 4) in charter schools was virtually the same in English, and significantly higher in maths than at other district-run schools.

Figures 3 & 4

A 2013 study by Stanford University's Centre for Research on Education Outcomes (CREDO) showed that "on average, students in New York City charter schools learned significantly more than their virtual counterparts in reading and mathematics" (CREDO, 2013, p. 14), a finding repeated in their 2015 work (CREDO, 2015). Furthermore, Winter's 2012 study identified some evidence that "increases in the attrition to charter schools from traditional New York City public schools has small but positive effects on the academic proficiency of students who remain in public schools" (Winters, 2012, p. 301), thus showing the benefits charter schools can have on the whole system.

Diane Ravitch has identified instances where charter schools serve different populations from those of their district-run counterparts, which might explain some of the difference in performance when comparisons are drawn within individual areas (Ravitch, 2012); however it would not account for CREDO's findings, above, which pair individual students using the NYC lottery-system of school place allocation. In addition, the 2015 CREDO study suggested that charter schools and district-run schools (across the city as a whole) served similar populations in terms of special education needs and poverty (see Table 2).

Table 2

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By 2013 there were 183 charter schools and 337 SSCs in NYC (Kelleher, 2014, p. 27–8) (out of approximately 1800 schools in total, i.e. around a quarter (NYC DOE, 2015a)) significantly contributing to NYC's improved pupil outcomes. The structural changes radically altered NYC's education landscape, but the evidence that exists suggests they did so for the better.

Reform four: teachers

Contemporary evidence suggests that the single biggest driver of improved school effectiveness is improved teaching (Ko & Sammons, 2013). From a policy perspective changing the teaching (or the teachers) is sometimes viewed as an attractive, potentially low-cost option (although this depends a great deal on context). Coe et al. outline some of the myriad techniques, styles or approaches that underpin 'great teaching' in their 2014 summary of evidence. Accordingly, Joel Klein believed that "the biggest factor in the education equation [was] teachers" and the fourth area of reform in NYC centred on further professionalizing the teaching profession while removing poorly performing teachers from the system (Klein, 2014, p. 189).

As can be seen in Figure 5, there is evidence that the quality of teachers recruited to the profession in NYC did improve during the 2000s (in terms of their own academic ability):

Figure 5

"In 1999, 43 percent of individuals hired to teach in NYC are drawn from the bottom third of the SAT distribution; by 2010, 24 percent are. In 1999, 21 percent of novice NYC teachers have SAT scores in the top third; by 2010 this figure increases to 40 percent" (Lankford et al., 2014, p. 28).

This view was backed up by a school principal interviewed, who noted that the "criteria to become a teacher have got more rigorous – which is good" and that the majority of teachers in NYC were "people who are trying to look for the best methods to convey the information to the students." A former adviser to the chancellor suggested that this

improvement in standards was partly down to the increased autonomy provided to principals, which allowed them to make:

> "More strategic and detailed decisions about how the funding that they have is going to be used… so they can decide on the mix of teachers within their building to make sure they are able to attract high quality teachers but at a decent price" (former special assistant to the chancellor).

Although Klein and Bloomberg had success in terms of improving standards through new recruits to the profession – which in turn helped contribute to increased professionalization of the workforce – they had less success in removing those teachers that they deemed to be poor. Klein blamed the previously deep-rooted dysfunction within NYC schools on the stranglehold teaching unions held over the administration (Klein, 2014). Indeed, objectively some of the practices within staffing did seem counterintuitive (in terms of obtaining the best outcomes for students): prior to the changes in NYC there was a requirement that teachers had to be appointed based on seniority and not ability – with more senior staff automatically getting jobs at the expense of their junior colleagues, regardless of the wish of the appointing school/principal; after three years' service teachers automatically received tenure, which made it harder to remove them unless they committed gross misconduct; and principals lacked the autonomy to make appointments, particularly in terms of their senior staff/assistant principals. Teachers awaiting disciplinary hearings were sent to 'reassignment centres' (notoriously known as 'rubber rooms') where they were prevented from teaching, but still received their full salary. Although the arbitration process was streamlined, it often took years to remove incompetent teachers from the system (Freedman, 2007; Kugler, 2010).

One of Klein's stated regrets during his time at the helm of NYC's education system was that he was unable to properly communicate with the teachers, owing to union

regulations: "I just wish I had had the ability to explain to them directly what we were doing and why and to hear and address their reactions" (Klein, 2014, p. 196). Approval ratings for the NYC education administration were high from both principals and parents in 2010, shortly before Klein left office, however, he was dismayed by the comparatively low approval figures he received from teachers in the city. Unable to interact with teachers directly, he felt robbed of the opportunity to explain his theory of change and instead believed that he was judged solely through the media's portrayal of his work (Klein, 2014).

A senior official in the DOE stated that: "the most important relationship in a school district is between kids and teachers and everyone and everything external to schools ought to exist in support of that relationship." Klein made it a priority to do just that, but was hampered by the role of the unions, who felt that they were protecting the interests of their members. Nonetheless, the administration established new pathways for training teachers, opened up the market for hiring teachers and transferring them and instituted pay increased and a limited system of performance-related pay in order to attract the best applicants (Kelleher, 2014, p. 42) – borne out by the increase in academic ability of those newly entering the profession.

Discussion

Reforms in NYC did not happen in isolation, but rather the four themes identified in this paper outline how the broader picture of change happened holistically: it is not possible to understand system reform purely in the context of one without the others. A focus on improved leadership, both at the top (system/political) level and at the level of school principals, underpinned the approach. Firstly, the consistency of system leadership meant that change was sustained; as Michael Barber puts it "persistence will be rewarded ultimately" (Barber, 2013). Secondly, by granting school principals greater autonomy, Bloomberg empowered these critical players in the system, allowing them to make key decisions over

staffing and over opportunistic learning costs, both of which are cited by Hattie as features of higher-achieving countries in international tests (Hattie, 2015a).

Autonomy was accompanied (directly in the form of the contracts Klein/Bloomberg made with those who signed up to the pilot Autonomy Zone, and then later with all principals) by accountability – allowing the DOE to identify the weakest performing schools and to step in where necessary. This was important personally for Mayor Bloomberg given the fact he staked his reputation on fixing the broken school system: "if you can't measure it, you can't fix it" (Bloomberg, 2012). More concretely, Bloomberg and Klein closed schools that weren't meeting the required standards and replaced them with small schools of choice, while simultaneously opening up the market to charter schools and focused on strengthening the pool of graduates entering the teaching profession, although Klein admitted that this was one area in which he would like to have achieved more (Klein, 2014).

And so the reform programme encompassed leadership, teachers, and structural reform, underpinned by increased accountability – consistent with Hattie's outline of successful education systems:

> "In the top education systems, however measured, it is the excellence of teachers, the support of such excellence and an open debate about the nature of growth towards excellence that matters. In my narrative, many teachers and school leaders are the heroes… The conditions – the structural aspects of schools – need to be supportive for the efforts to improve the progression of learners (and the expertise of teachers and school leaders) to succeed" (Hattie, 2015b, p. 26-27).

If one views NYC's education system as a simplified pyramid (see Figure 6), then the reform agenda targeted each level directly (other than the students).

Figure 6

In some regards this model does appear extremely top-down – policy changes were necessarily driven by those in power and some of these changes certainly happened at the

higher levels of this pyramid, with effects on students expected to filter down – something that John Hattie criticises as an ineffective approach to system reform (Hattie, 2015a). However, other policies were designed to create conditions for improvement which were more organic in nature – such as granting greater autonomy to school principals in order to drive improvement or improving the level of qualifications of new teachers in order to gradually enhance the professionalization of the workforce (and the expected impact this would have on teaching quality).

The long-term impact of reform in NYC remains to be seen. Bill de Blasio was elected mayor in 2013, taking office in 2014, on a platform of radically different education policies, and in direct opposition to the Bloomberg era (Meyer, 2014). Notably he advocated a reduction in the expansion of charter schools, "representing unions, he has maintained a 'slow growth' approach to charter schools in the city – a strong reversal from the 12 years of growth the charter sector experienced under Mayor Bloomberg" (Robinson, 2015) and criticised school closings (Meyer, 2014). Although it is too soon to gauge the impact de Blasio has had, he continues to announce policies which represent a departure from the Bloomberg/Klein school of thought (New York Post Editorial Board, 2015). Michael Barber has often emphasised the need to not just implement reform, but to implement irreversible reform:

> "Irreversibility means not being satisfied merely with an improvement in outcomes, but asking whether the structures and culture are in place that will guarantee the right trajectory of results for the foreseeable future. How can the changes be made to stick?" (Barber et al., 2010, p. 33)

In some regards, Bloomberg did put in place more permanent change: Meyer quotes Michelle Cahill, an education specialist who worked for Klein:

"Small schools is not an initiative… there are several hundred high schools now that are functioning in New York, and they have students and teachers and parents who affiliate with them and are showing tremendous results" (Cahill in Meyer, 2014).

However it remains to be seen whether other policies, particularly those around autonomy and accountability, will prove to be as irreversible. Indeed, what is clear is that the direction of reform has decidedly changed: de Blasio does not talk about closing down failing schools, but instead has rebranded them as 'community schools' within a 'Schools Renewal Program' (Communities in Schools, 2014).

While it is not possible to prove causation between the policy reforms during the period and improved outcomes (particularly graduation rates) there is clearly a strong correlation, and the evidence from the expert witnesses interviewed suggests a relationship between the reform agenda and outcomes.

Conclusions

After barely any change in the high school graduation rate for a period of at least ten years, between 2002 and 2014 the rate of students graduating high school in NYC increased by around half. This remarkable uplift in academic outcomes coincided with Michael Bloomberg's time as mayor in NYC and suggests that the programme of education reform he implemented was successful. Bloomberg was elected mayor for three consecutive terms, with education policy often at the forefront of his approach, suggesting that voters recognised this improvement, even in the face of a vocal critical minority.

Joel Klein was Bloomberg's schools chancellor for most of the decade, and he led the reform effort, particularly focusing on improving equality across the city. As well as introducing fairer systems of funding and place allocation, policies such as encouraging charter schools to open were often explicitly aimed at helping disadvantaged students who had been historically let down by the public school system.

'"I think that was one of his accomplishments. I think he managed to put together a system to channel dollars into schools with high need populations. I do believe that Joel was very much committed to social equity in education" (former special assistant to the chancellor).

Klein and Bloomberg rooted out poor performance, with an aggressive policy of school closures matched by the opening of hundreds of new small schools which gave parents and students greater choice. Their reforms were based on a view that improving the quality of teachers and principals was an essential precondition for school improvement:

"Whatever else we do, we need to make teaching a well-respected profession that attracts our best college graduates and ensures that they have the training in the subject area they will teach as well as in pedagogy and classroom management" (Klein, 2014, p. 283).

Other urban centres might do well to consider the mixture of reforms adopted in New York City during the 2000s: although it was by no means an unmitigated success, there was significant improvement in the educational outcomes of students during the period. Few of the changes, on their own, can be considered to be especially unique, but the programme of change as a whole did appear to lead to these improved outcomes. In particular I would suggest that this combined agenda of policy reform should be focused on, rather than any approach which is piecemeal in nature: Bloomberg and Klein initiated a raft of changes which worked together to address the individual contextual problems they identified, and it is this theory of change which brought about the upturn in fortunes for NYC's schools.

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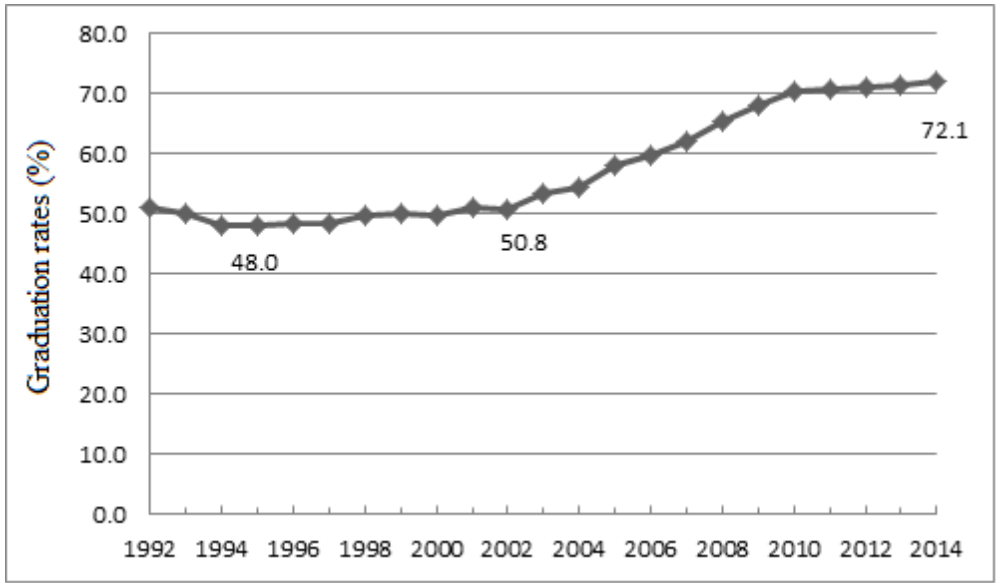
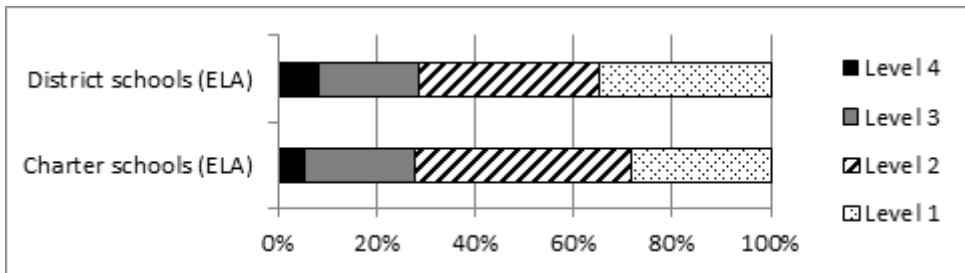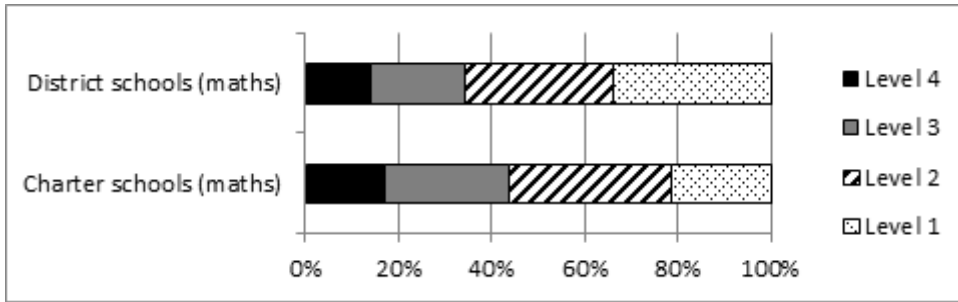*Figure 1: Graduation rates in NYC (%), 1992-2014, using the 'traditional method' (NYC DOE, 2014).*

Figure 2: Percentage of students proficient on the NAEP in 15 different urban centres (NYC DOE, 2013).

Figures 3: Percentage of students scoring levels1-4 (Grades 3-8) in maths (NYC Charter School Center, 2014).

Figures 4: Percentage of students scoring levels1-4 (Grades 3-8) in English language arts (ELA) (NYC Charter School Center, 2014).
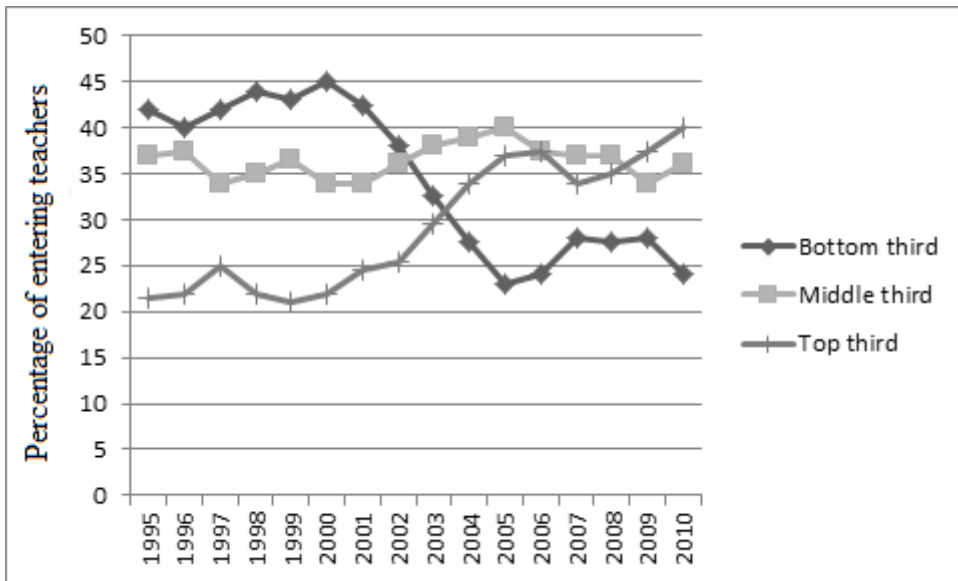

Figure 5: Percentage of entering teachers in NYC drawn from bottom, middle and top thirds of state-wide score distribution (on national SATs) (Lankford et al., 2014, p. 28).
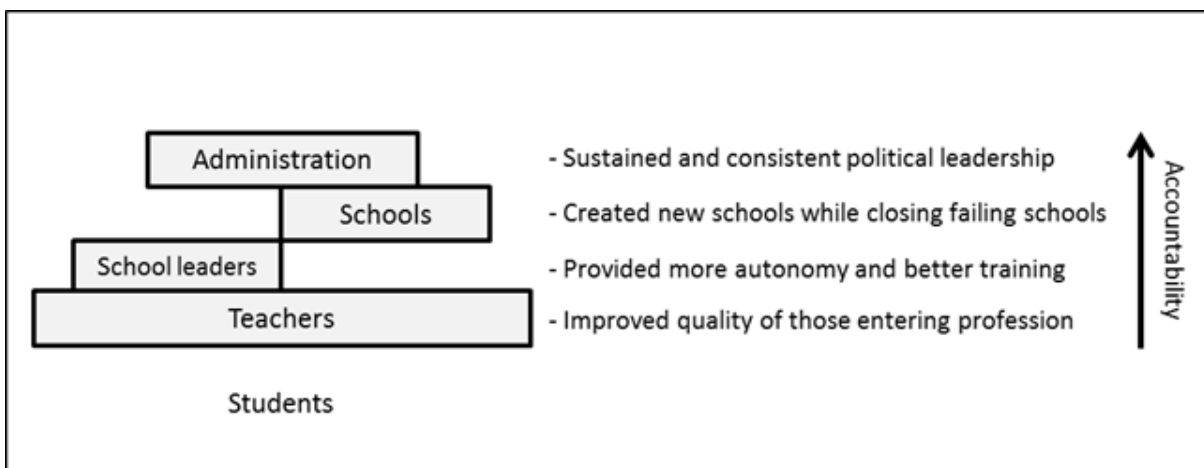

Figure 6: Key education stakeholders in NYC and reforms.

	SSC students (outcome %)	Control group counterparts (in other district-run schools) (outcome %)
Graduated from local high school	70.4	60.9
English Regents exam score of 75 or above	40.2	33.4
Maths A Regents exam score of 75 or above	24.6	24.7

Table 1: Estimated effects of SSCs on 4-year high school graduation and college readiness (graduation rates 2009-2011; exam scores 2005-2011) (Bloom & Unterman, 2013, p. 8).

	Percentage of students in special education	Percentage of students in poverty
District-run schools	14	82
Chart schools	14	81

Table 2: Comparison of student intakes, NYC (CREDO, 2015, p. 7).