Chapter 18
Doing Things Differently in Order to Do Them Better: An Assessment of the Factors that Influence Innovation in Schools and School Systems

Toby Greany

Abstract This chapter explores the systemic factors that help and/or hinder change and innovation across school systems, with a focus on evidence and examples from England. It sets out an innovation framework, adapted from (Leadbeater, C. and Wong, A., Learning from the Extremes, Cisco, San Jose, CA, 2010), as a means of comparing examples of innovation and to analyse the factors that influence them. It finds that i) innovation is risky and demanding for schools, ii) school autonomy policies can support isolated examples of innovation, but will not lead to systemic change, and iii) system-wide change requires sustained capacity building within a values-based framework that allows for local agency and adaptation. These findings contradict the OECD's (2015a, b) view that top-down policy is 'impotent' to effect change and also challenges arguments that innovation requires school autonomy coupled with clear vertical accountability and minimal central co-ordination. The chapter concludes by reflecting on how best to balance structure and agency, so that innovation is encouraged and learning is spread. This requires a sophisticated set of capabilities from those overseeing public education systems: stretching traditional conceptions of public sector governance to include systems for vertical and lateral knowledge sharing and mechanisms which continuously engage teachers, parents and other stakeholder groups in processes of systemic innovation and change.

Keywords Educational innovation · School system reform · School leadership and change · School autonomy and accountability

18.1 Introduction

This chapter reviews the literature and explores the systemic factors that help and/or hinder change and innovation across school systems, with a focus on evidence from England. The chapter draws on five specific examples drawn from three areas of policy and practice—pedagogy, curriculum and school improvement—to illustrate

T. Greany (✉)
School of Education, University of Nottingham, Nottingham, UK
e-mail: toby.greany@nottingham.ac.uk

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and explore these issues. It also sets out an innovation framework, adapted from Leadbeater and Wong's (2010) framework as a means of comparing innovations and analysing the factors that influence them.

The chapter draws on the author's experience of working with schools in England on a range of innovation-related projects over a 20-year period as well as a wider review of the literature. This includes his experience as a former Senior Civil Servant based at England's National College for School Leadership, where he was responsible for the development and implementation of new policies that sought to generate and support innovative evidence-informed practices in schools.

A number of authors (Caldwell & Spinks, 2013; Hallgarten et al., 2015; Hargreaves, 2003; Leadbeater & Wong, 2010) have argued that schools and school systems need to become more innovative and adaptive if they are to meet the needs of twenty-first century societies and economies. Hallgarten et al. (2015: 22) state that, despite decades of reform in education, real change has been constrained by an unquestioning acceptance of narrowly defined criteria for success, as measured through tests and examinations:

> The structures that dictate the systems, processes and intended outcomes of the formal schooling system remain remarkably resilient. In the domain of organized tax-funded education, systems of schooling are for the most part in improvement mode: that is they take for granted the implicit parameters and metrics which maintain the industrial model of schooling.

In their view, this focus on 'improvement' has led to a crisis of legitimacy, resulting in issues such as learner dissatisfaction, disengagement and stress, growing costs, frustrated teachers, challenges with equity, and a mismatch with societies' real needs. The issue of legitimacy in relation to innovation, as well as improvement, is returned to in the conclusion of this chapter.

Hallgarten et al.'s assessment raises a fundamental question about whether and how school systems that have been premised on 'improvement' can move to become more responsive to the ever-changing needs of societies and economies? This chapter seeks to contribute towards a better understanding of this question. It adopts the definition of innovation used in the title—'doing things differently in order to do them better'—a definition which is consciously broad; which emphasises the need to evaluate changes in order to understand whether they are genuinely 'better'; and which implicitly suggests a definition for 'improvement' along the lines of 'doing the same thing harder and/or faster'.

The focus of the chapter is primarily on the conditions required for successful innovation across school systems, rather than within single schools. This is not to suggest that intra-institutional change and innovation are not relevant, simply that they have already been studied extensively from both organisational and leadership perspectives (Day et al. 2011; Hall & Hord, 2001; Kotter, 1996; Leithwood et al. 2006; Matthews et al. 2014; Ofsted, 2009a, b; Schein, 2010). A recent development in this area has been the study of evidence-informed practice, where the importance of trust and informal processes of influence between teachers have been highlighted as significant (Brown, 2015).

Over the past thirty years, quasi-market models premised on school autonomy, parental choice and competition between providers have been seen by policy makers around the world as the best way to secure flexible and innovative school systems (OECD, 2015b), but the evidence that such models are actually effective in fostering innovation remains thin (Glatter et al., 1997; Lubienski, 2009; Waslander et al., 2010). Partly in recognition of the flaws in classic quasi-market thinking, research and thinking on system change and innovation have developed rapidly in recent years. Michael Fullan (2002) argued that individual school leaders could and should consider their influence on other schools and the wider system as part of their moral purpose. In a similar vein, David Hargreaves (2003) argued that systemic transformation requires a move away from top-down imposition and the development of disciplined innovation networks. Recent work on innovation (Hallgarten et al., 2015; Suggett, 2015) suggests that traditional conceptualisations of top-down versus bottom-up change are largely inappropriate. Similarly, the OECD argues that traditional notions of top-down policy implementation are 'increasingly inadequate' because policy is 'notoriously impotent to change behaviour in teaching and learning' (2015a: 17). Instead we need to understand change and innovation as orchestrated through complex combinations of vertical and lateral knowledge mobilisation.

These ideas are now being explored from a number of angles, including: policy development, implementation science, regulation and governance (Mourshed et al., 2010; Sahlberg, 2011; Greany, 2014, 2015a, b, c; Barber, 2015; Ainscow, 2015; Burns and Koster, 2016); networks, partnerships, system leadership, school-to-school support and peer evaluation (Hargreaves, 2012; Kamp, 2013; Suggett, 2015; Greany, 2015d; Matthews & Headon, 2015; Muijs, 2015); and knowledge mobilisation (Bryk & Schneider, 2002; Daly, 2010; Greany, 2015c). Other research has looked at specific aspects of innovation, such as in the curriculum (Cheng & Greany, 2016; Kärkkäinen, 2012).

The chapter is structured in seven sections following this introduction. The first provides key definitions and frames the issues. The next two sections look separately at quasi-markets and the high-autonomy-high-accountability model. These models operate in tandem in England, but they are outlined separately as they have different intellectual antecedents and practical implications for innovation policy. The fourth section summarises recent developments in England's 'self-improving school-led system' since 2010. The fifth section introduces the five examples of innovation in the areas of pedagogy, curriculum and school improvement. The sixth section categorises and analyses the five examples using an adapted version of Leadbeater and Wong's innovation framework (2010) in order to allow for a comparison of the factors that have influenced their implementation. The final section discusses the implications of the examples in the context of wider thinking and research on innovation policy across school systems and sets out a series of conclusions.

Overall, the chapter highlights a number of implications and conclusions on the systemic factors that help and/or hinder change and innovation across school systems based on its cross-case analysis of the examples from England using the adapted innovation framework. Firstly, policymakers need to understand that innovation is risky and demanding for teachers and school leaders and need to find ways to mitigate

these risks. Secondly, increasing school autonomy on its own might lead to isolated examples of innovation, but will not lead to systemic change without implementation support and capacity building. Thirdly, system-wide change and innovation is possible, but requires strong and sustained political support and capacity building within a values-based framework that allows for local agency and adaptation.

These findings provide an important challenge to those who argue that quasi-markets could still secure innovation, if only market incentives could be increased by extending school autonomy and reducing central co-ordination yet further. Rather, the findings suggest that we need a more nuanced definition of autonomy; one that distinguishes between 'structural' and 'professional' autonomy, with an emphasis on building professional autonomy. We also need a more nuanced understanding of accountability, since this can be central to improvement efforts, but can limit the scope for innovation in the eyes of practitioners and can narrow the perception of school quality (and therefore attitudes to innovation) among parents. All this suggests that the key challenge is around how to balance central control and local agency, so that innovation is encouraged and learning is spread. This requires a sophisticated set of capabilities from those overseeing public education systems: stretching traditional conceptions of public sector governance to include systems for vertical and lateral knowledge sharing and mechanisms which continuously engage teachers, parents and other stakeholder groups in the process of systemic innovation.

18.1.1 Quasi-Markets and Innovation

As Lubienski (2009) describes in detail, the economists such as Milton Friedman and Julian Le Grand who originally proposed quasi-markets in education saw choice and competition between schools as critical for driving enhanced innovation and quality. Similarly, the politicians championing autonomous charter schools in the USA, academies in England and free schools in Sweden have all seen innovation and increased choice as primary outcomes. The implicit assumption seems to be that innovation by autonomous schools will be a naturally occurring feature of such systems as schools compete to attract and retain parents, with minimal need for additional interventions or support from policy.

In practice, studies (Glatter et al., 1997; Waslander et al., 2010) indicate that local hierarchies of schools develop in competitive systems, from the most to the least popular. Schools at different ends of these hierarchies tend to respond differently to competitive pressures, but the dominant response is for schools to try to control their intake by attracting the most 'desirable' students. This might involve anything from increasing marketing spend to developing attractive new facilities. Clearly this presents a number of challenges, most importantly the potential for increased stratification by social class and socio-economic status between schools (Gorard, 2013). A recent summary of research for the OECD (Waslander et al., 2010: 7) concluded that 'the effects of market mechanisms in education are small, if they are found at all'.

Lubienski's review for the OECD (2009: 18) explores these issues specifically in relation to innovation, distinguishing between different types of innovation, for example in processes as well as products. He finds that competition does make schools 'more sensitive and responsive to the demands of stakeholders… leading to a more diverse range of programmatic options in many localities'. But he also finds that 'we are seeing fewer new product and process innovations than might be expected, especially of the disruptive, "second-order" type' (ibid: 27).

Thus, it seems that autonomous schools operating in quasi-markets may increase choice for parents, by transposing existing innovations from elsewhere into the new context, but will not necessarily increase the overall level of innovation in a system.

18.1.2 High-Autonomy–High-Accountability Systems and Innovation

England has arguably been one of the pioneers of quasi-market reform, introducing parental choice of school and funding-follows-the-learner mechanisms from 1988 onwards. But these reforms have formed part of a wider approach—characterised as high-autonomy–high-accountability—that is distinct from the market-based approach due to its strong reliance on central accountability.

Having lost faith in what Barber (2015) calls the post-war 'trust and altruism' model of public service delivery, in which local authorities ran schools with minimal central oversight, policymakers in England have devolved significant decision-making power and resources to schools. School leaders in England were already among the most autonomous in the world at the start of the current decade (OECD, 2011), and levels of autonomy have been extended further in recent years through the academies programme (see below). Evidence suggests that it is school autonomy over curriculum and pedagogical choices—as opposed to financial and human resources—that correlates most closely with improvements in outcomes (OECD, 2011). Importantly, though, such approaches do not appear to be appropriate in all contexts as they are related to levels of professional capacity (Bloom et al., 2014; Di Liberto et al., 2014; Hanushek et al., 2012).

In order to incentivise improved outcomes in England's autonomous schools, policymakers have put in place central regulation and control. Key features of the central accountability system in England include: a National Curriculum, national tests and examinations, the publication of school-level performance in these exams, floor targets and other metrics that schools are required to meet, regular inspections of schools with reports published grading schools on their quality, and a framework and system for intervening in schools that are deemed to be underperforming. This approach reflects the OECD's advice to system reformers that autonomy must be combined with accountability if it is to drive consistent improvement across school systems (2015b).

Well-designed accountability systems have the potential to mitigate some the pitfalls of pure quasi-markets, not least by providing transparent information to inform parental choice. Such systems can also provide clarity for schools on what success 'looks like' and can help government assess value for money (Ehren et al., 2014). The risk is that such systems quickly descend into an unhealthy 'performativity' regime (Ball, 2003), flattening the very freedom and autonomy that governments want to encourage while encouraging school leaders to narrow the curriculum (teaching to the test) and to focus their efforts on attracting the most desirable students (Cappon, 2015; Waldegrave & Simons, 2014).

18.1.3 England's 'Self-Improving School System' Reforms Since 2010

The education reforms under the Conservative-led coalition government elected in 2010 and the Conservative majority government elected in 2015 have been radical and widespread, affecting almost every aspect of school life. They build on the previous two decades of quasi-market high-autonomy–high-accountability reforms but also take these to a different level, particularly in terms of school autonomy, while also introducing a much stronger focus on developing lateral networks as the basis for a 'self-improving school-led system' (2015a; b, d; Greany, 2014). A key tenet of the approach is that 'the attempt to secure automatic compliance with central government initiatives reduces the capacity of the school system to improve itself' (DfE, 2010: 13).

Greany (2014) suggests that there are four principles underpinning the government's approach to the self-improving system:

I. Teachers and schools are responsible for their own improvement.
II. Teachers and schools learn from each other and from research so that effective practice spreads.
III. The best schools and leaders extend their reach across other schools so that all schools improve.
IV. Government support and intervention is minimised.

Changes since 2010 have included: a new National Curriculum and framework for national tests and examinations; a more demanding accountability model for schools; significant changes to how teachers are recruited, trained, performance managed and rewarded; a move towards a national funding system and the introduction of additional funding for each child in receipt of Free School Meals (Lupton and Thomson 2015).

Structural change has been a major feature of the reforms, increasing school autonomy through the academies programme. Academies are companies and charities that are funded directly by central government, rather than their Local Authority (LA). Academies have greater autonomy than LA maintained schools: for example they can operate their own admissions within a broad framework and are not required

to follow the National Curriculum or employ qualified teachers. By early 2016 there were 5500 academies in total, representing almost one in four schools (Morgan, 2016). Multi-Academy Trusts (MAT—federations or chains of schools operating under one governance board) have become a central feature of the system: around 58 per cent of all academies and free schools are now in a formal chain (HoC Education Select Committee, 2015). Another plank of the Coalition's structural reform approach has been to support the development of new 'free schools', Studio Schools, University Technical Colleges and University Training Schools (discussed below). By September 2016, there were over 400 free schools open.

A further innovation has been the expansion of 'system leadership' and school-to-school support, through which successful leaders are encouraged to work across two or more schools (Greany, 2016). School-to-school support is arguably now the primary mechanism for school improvement in England (Earley et al., 2012; HoC Education Select Committee, 2013; Sandals & Bryant, 2014).

The corollary of these shifts has been a wholesale reshaping of England's middle tier, with Local Authorities largely hollowed out but still nominally responsible for maintained schools (around three in four of the total) and the emergence of a mixed economy of academy chains and Department for Education-appointed Regional Schools Commissioners overseeing the 5500 academies (Greany & Higham, 2018; Greany, 2015d). Assessing the impact of the self-improving system so far is challenging given the rapid pace and scale of change and the limited time for the reforms to bed in. On the one hand, reports suggest that private fee paying schools are struggling to recruit students because the perception of state-funded schools has improved so dramatically among parents,[1] while on the other there is some evidence that a 'two-tier' system is developing in which strong state schools thrive but weaker ones are left struggling (Coldron et al., 2014; Earley et al., 2012) as well as significant concerns around teacher recruitment, workload and regional disparities in performance (Ofsted, 2015; DfE, 2015). The PISA and TIMSS 2015 results suggest that England's performance against international comparators has continued to remain relatively static (Greany, 2016).

18.2 Examples of Innovation: Pedagogy, Curriculum and School Improvement

This section presents examples of change and innovation in three areas: pedagogy, curriculum and school improvement. The focus on these three areas is justified because they are all core to the current operation of schools and school systems. Many innovations seek to introduce additional practices into schools which can be layered

[1] Headline in The Guardian 'Massively' improved state schools threaten private sector: Better behaviour and results are attracting families who can afford private school fees, says Good Schools Guide editor', 5.2.16 http://www.theguardian.com/education/2016/feb/05/massively-improved-state-schools-threaten-private-sector accessed 24.2.16.

on to existing core practices, for example using social media to enhance communication with parents. By contrast, changes to pedagogy, curriculum and approaches to school improvement all require innovations in existing practices and so allow for an exploration of the question at the heart of this article: how can school systems that have traditionally focussed on 'improvement' make the move to become more 'innovative'? The examples themselves have been selected based on two criteria:

- The original aim of the intervention or project must fit the article's definition of innovation (doing things differently in order to do them better), even if this aim has not been fulfilled.
- The project or intervention must have been assessed through at least one independent evaluation.

Neither the innovation examples selected nor the evaluations that have assessed their impact adopt a standard methodology. This is justified because the rationale for selecting them is not to assess whether one innovation was 'better' or more 'impactful' than another. Rather, a range of very different examples has been selected quite deliberately, based on the review of literature undertaken for this article as well as the author's own direct experience, as a way of illuminating the different aspects of systemic innovation that are discussed in the final sections. While it could be argued that a more cautious approach would be to compare only innovations that have adopted similar methods and evaluation metrics, or that address a single aspect of practice, this approach would not have served the aim of this article, which is to explore the systemic factors that help and/or hinder change and innovation across school systems. Such a systemic analysis requires an understanding of the differences and trade-offs involved when innovating across different areas of a school system.

18.2.1 Pedagogy Example 1: Piloting a 360° Classroom in One School

This vignette is not a system-level innovation, but is included because it highlights some of the challenges involved in innovation efforts at school level. These challenges clearly need to be recognised and understood by policymakers and system leaders if they are to develop innovation across school systems.

The vignette describes an ambitious innovation in one secondary school that proved challenging in many ways. The author was directly involved in the work as the leader of the national project of which it formed part.[2] The data for the vignette

[2] The Design Council Learning Environments Campaign ran from 2003–2006 and comprised several strands, all aimed at enhancing the quality of school design. One strand involved working with 12 secondary schools to design and test innovative environments through a collaborative design process. The author was the Campaign Leader from 2004–05 with responsibility for the overall programme of work.

is drawn from the project documentation and an external evaluation undertaken by academics at the University of Newcastle (Hall & Wall, 2005).

The boys' secondary school in a deprived urban area was one of twelve secondary schools that applied to work with a team of designers and educational experts to shape and implement an innovation in their physical environment. The school identified 'boys' underachievement' as the theme that they wanted to explore via the project. The work started with a two-day design workshop run by the project team and involving senior leaders, teachers and other staff as well as pupils from the school. Drawing on research suggesting that boys prefer a more hands-on approach to learning, the school representatives developed a brief for a 360° classroom. Three design teams were then commissioned to respond to this brief, with the school staff and students selecting their preferred option. The selected option was then designed and built as a prototype in a temporary classroom at the school site and used for teaching by volunteer staff from across the school. An image of the prototype classroom is included below.

The description of the classroom from the project prospectus (Design Council, 2005) is as follows (Fig. 18.1):

> The concept centres on the 'heart', a secure and mobile multimedia projection module at the centre of the room. The combined table/chair reduces the footprint of a traditional desk and chair, leaving space for the teacher to circulate around the 'racetrack' and so access each student individually. The flexibility of the table/chair means it can also be moved by the students to support individual, paired and group work, while the whiteboards around

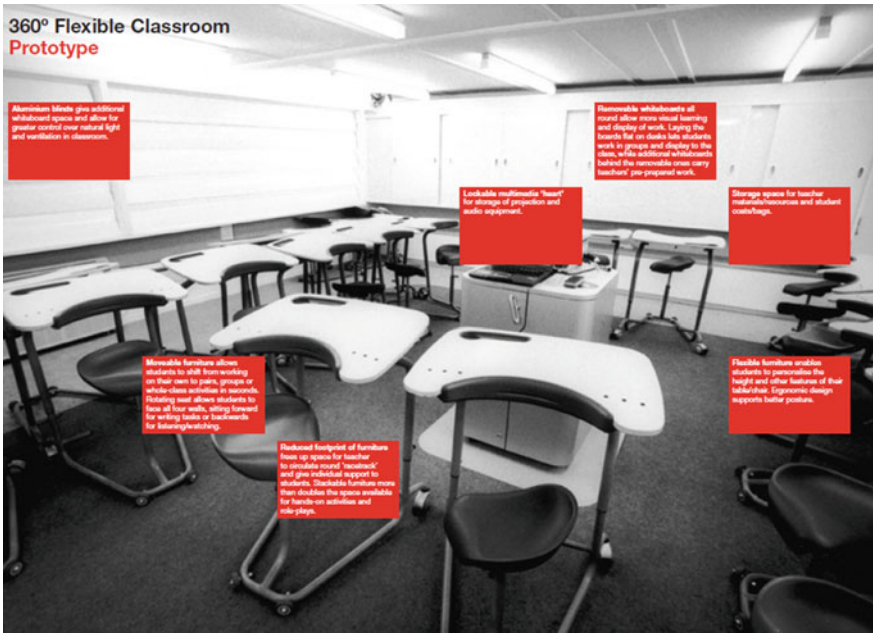

Fig. 18.1 360° classroom. Reproduced from Design Council (2005)

> the walls can be removed (to reveal additional display space) and placed onto the tables to facilitate group work. The aluminium window blinds move individually to control light and air flow and can also be used as whiteboards to provide additional display and projection space, meaning that in the final plenary session of a lesson the teacher can refer to a vivid learning 'trail' that has been built up around the four walls.

Any teacher reading this will immediately appreciate that the design required fundamental changes to standard classroom pedagogies: for example the removal of the teacher's desk, the potential for reconfiguring the classroom multiple times in the course of a lesson, the potential different uses of space and the option of additional technology. The challenge of adapting to these changes was compounded by the fact that the classroom was built as a prototype. This meant that it was not fit for purpose in many respects, for example: it was built in a temporary classroom that was too small to allow for the anticipated movement of teachers and pupils; there was no heating, making it too cold in winter; and the chair height could be 'dropped' by a student to make a loud noise in the middle of a class.

In practice, all these changes proved too great to withstand. Despite significant commitment and effort, the volunteer staff refused to use the classroom after the first two terms of the pilot year. They argued that it was not fair on the students to risk their learning by putting them in a prototype environment.

The example highlights how difficult it is to attempt disruptive innovation in a 'live' environment, even with structured support and involvement from the school staff in defining the original concept and brief.

18.2.2 Pedagogy Example 2: Changes in Pedagogy in Primary Schools

The second example is taken from Webster's (2015) analysis of six separate systematic observation studies conducted in English primary classrooms between 1976 and 2012. The findings are shown in Table 18.1. They show the time that pupils observed spent interacting in class with either: a teacher or teaching assistant (whether as part of a whole class, part of a group or individually); with their peers, or with no one. The findings are separated between children with and without special educational needs (SEN).

The table shows that for non-SEN children, interactions with the teacher increase from 16% of the time in 1976 to 40% in 2011–2012. This is due to an increase in whole class teaching, rather than teachers working with small groups or individuals. Peer interaction increases from 19 to 32% over the same period, while 'no interaction' decreases from 66% of the time to 26%. Although not all the studies looked at children with SEN, those that do show marked increases in time spent with a teaching assistant, with much smaller increases in the amount of time spent interacting with their teachers than their non-SEN peers. The trends over time are relatively consistent, although the 2005 study has some exceptions in this respect.

Table 18.1 Evidence from six systematic observation studies undertaken in primary school classrooms over a 35-year period (Webster, 2015)

			Pupils without SEN					Pupils with SEN		
		Oracle 1976/1977	One in five 1981/1982	PACE 1993–1996	Oracle 2 1995/1996	DISS 2005/2006	MAST 2011/2012	One in five 1981/1982	DISS 2005/2006	MAST 2011/2012
Teacher and pupil	Part of class (%)	12	23	24	21	44	35	21	36	30
	Part of group (%)	2	3	2	4	3	2	2	3	2
	One-to-one (%)	2	2	4	3	4	3	3	7	4
	Teacher total (%)	16	28	30	28	51	40	26	46	36
Teaching Assistant and Student	Part of class (%)	–	–	<1	–	0	1	–	<1	3
	Part of group (%)	–	–	<1	–	2	1	–	5	5
	One-to-one (%)	–	–	<1	–	2	1	–	9	13
	Teacher total (%)	–	–	<1	–	4	2	–	15	20
Peer interaction (%)		19	19	22	27	20	32	18	16	18
No interaction (%)		66	53	46	45	25	26	56	23	26
Total interaction (%)		100	100	100	100	100	100	100	100	100

Webster is rightly cautious about speculating too much as to why the classroom experience of children observed in these studies changes over the period. He does note that for non-SEN children the authors of some of original observation studies linked these changes to the introduction of the National Curriculum from 1988 onwards. However, this assumption can be challenged since the results are relatively static between 1981–1982 and 1995–1996, suggesting that the National Curriculum itself did not make a difference in its first seven years. The big increase in whole class teaching comes between 1995–1996 and 2005–2006, a period that arguably saw the strongest ever state intervention in pedagogy in England through the national literacy and numeracy strategies. These strategies were explicit in requiring all primary schools to allocate specific amounts of time to literacy and numeracy teaching each day, using standardised whole class teaching methods (Alexander, 2011). Whole class teaching then dipped between 2005–2006 and 2011–2012, perhaps reflecting the fact that the National Strategies became less prescriptive over time and were then closed down in 2010.

18.2.3 Curriculum Example 1: Innovation in Free Schools and Academies

Free schools have been explicitly set up since 2010 to challenge existing providers and to provide innovative curricula and pedagogical models (DfE, 2010). Like all academies free schools are not required to follow the National Curriculum or to employ qualified teachers. The government's original vision was that parents and voluntary groups might set up the schools, reflecting their own priorities and needs, but in practice the challenges involved in establishing a new school have meant that nearly half are now actually set up by established academy chains (Ofsted, 2015).

There are examples of free schools that have sought to offer a distinctive curriculum, reflecting both traditionalist and 21st Century ends of spectrum. For example, the West London Free School offers a 'a classical—knowledge-based-curriculum, including compulsory Latin up to the age of 14',[3] perhaps as a way to attract parents that might otherwise prefer a private education and reflecting Lubienski's comment about the traditional nature of parental expectations. By contrast, School21[4] has set out to offer 'new ways of teaching for the twenty-first century' aimed at developing a set of six attributes: eloquence, grit, professionalism, spark, craftsmanship and expertise. Both schools have proved popular with parents and have been judged positively by Ofsted, the school's inspectorate. By contrast, a small number of the other early free schools have been less successful, with two high profile examples where the school was closed after being judged Inadequate by Ofsted.

[3] See http://wlfs.org/ accessed 10.3.16.

[4] See http://school21.org.uk/ accessed 10.3.16.

As yet there is relatively little research on free schools, but one study of the first two cohorts opened after 2010 indicated that curriculum innovation had been limited, with a mixture of government bureaucracy and accountability requirements as the main cause (Dunford et al., 2013). Some have argued that the need to conform to the existing national accountability requirements has meant that free schools have been constrained in their ability to innovate (Taylor, 2012).

Turning to the much larger group of over 5000 schools that have either converted or been forced to become academies since 2010, they are also not required to follow the National Curriculum. As with charter schools in the USA, the expectation was that the academies would use their additional freedoms to innovate their curricula (Greany & Waterhouse, 2016). Thus far, however, the evidence indicates that this ambition has not been realised, or at least only in part. For example, a survey of academy leaders in 2014 (Finch et al., 2014) found that only 35% had, or planned to develop, a curriculum that varied from the National Curriculum. The authors concluded that 'academies are not fully capitalising on the freedoms they have over the curriculum' (ibid: 18).

18.2.4 Curriculum Example 2: Developing the Capacity to Teach Chinese

The teaching of mandarin Chinese has emerged as a policy priority in the UK in recent years. Addressing the challenge from a standing start is beyond the resources of a single school or even academy chain to address given that it requires action on multiple fronts, such as recruiting and training Chinese-speaking teachers to work in English schools, creating appropriate curriculum resources and formal examinations, finding space in an already crowded curriculum and persuading parents and teachers that it is a suitable subject for academic study.

Tinsley and Board (2014) researched the development of Chinese teaching in schools across the UK. They identified just ninety-five primary schools in England that are teaching Chinese—which equates to around 1 in 160—while in Scotland they identified 119 such primary schools—equating to around 1 in 16. The researchers are clear that Scotland's strategic plan for addressing issues such as teacher training and its support for implementation in schools through Local Authority hubs is part of that country's apparent success. By contrast, England's 'self-improving' system has very few capacity building levers to pull. For example, teachers are increasingly trained by schools rather than universities in England and the lack of scale and capacity in their operations makes it challenging to take on a new area. Similarly, the Local Authorities have all but disappeared from England and while the new academy chains and school networks are beginning to provide an alternative 'middle tier' infrastructure, their coverage is far from comprehensive across all schools and the quality of their work is variable (Hutchings et al., 2014; Gu et al., 2015).

18.2.5 School Improvement Example: School-to-School Support

Researchers in the 1990s characterised England's school system as highly competitive (Higham et al., 2009). In the mid-2000s, if a school was deemed to be failing then the response was invariably to send in teams of consultants to help turn it round. Less than 10 years later it was arguable that school-to-school support had become the predominant model for school improvement (HoC Education Select Committee, 2013). This shift from competition between schools to structured collaboration and support arguably represents a significant innovation in a system of 24,000 schools.

School-to-school support was pioneered through the London Challenge programme, which ran from 2004 to the end of the decade (Baars et al., 2014). Faced by the need to address systemic underperformance in the capital's schools, the London Schools Commissioner, Sir Tim Brighouse, persuaded some of the capital's most successful headteachers to support the 'keys to success' schools that had been identified as needing most improvement. The rationale for this approach was that support from credible, serving leaders and teachers would be more effective than that from external consultants (Mathews & Hill, 2010). This 'consultant head' model was then scaled up nationally by the National College for School Leadership through the National Leaders of Education/National Support Schools (NLE) and Local Leaders of Education (LLE) initiative. These headteachers and their teams are designated against a clear set of criteria and then brokered to support schools deemed to be underperforming. Evidence to date does indicate that outcomes improve faster in NLE-supported schools than in a matched sample (NCTL, 2013; Muijs, 2015) and that NLEs increase the rate of improvement for children on free school meals (FSM) (Rea et al., 2013).

Meanwhile, more structured forms of partnership through federations and Multi-Academy Trusts (MATs) in England have also adopted the school-to-school support approach. Whereas the NLE/NSS model involves temporary support from one school to another, federations and MATs both involve the school being subsumed into a larger group that is overseen by a single governing body or board, with schools within the group commonly supporting each other to improve. Chapman et al.'s (2011) research for the National College indicated a positive federation effect on pupil outcomes over time, most significantly in the case of 'performance federations' (i.e. strong and weak schools together) and where an Executive Head was in place. Analysis by Hutchings et al., (2014) has shown that while academy chains do appear to be improving outcomes for the most disadvantaged schools, performance between chains is highly variable.

Teaching School Alliances represent another model for school-to-school support, both because the partnership remains voluntary for alliance members and because the alliance remit is broader than just addressing underperformance. Launched by the 2010 White Paper (DfE, 2010) Teaching Schools are Outstanding schools that designated by the government to play a leading role in co-ordinating initial and continuing professional development, school-to-school support and research and development

across an alliance of partner schools. By October 2015, 692 Teaching Schools had been designated, while by October 2014 at least 7,144 schools were linked with a Teaching School, representing 32% of all maintained schools in England. The evaluation (Gu et al., 2015) reflects considerable progress overall and indicates the sheer diversity of organisational forms and approaches emerging, but also highlights the challenges for these informal partnerships where resources are scarce and schools are constantly pre-occupied by their own performance due to the high stakes nature of the accountability framework.

18.3 Towards an Innovation Framework: Categorising and Analysing the Examples

This section seeks to categorise the brief examples set out in the previous section in a suitable, overarching framework. The aim of this categorisation is to enable cross-case comparison of the different types of innovation in order to assess their relative significance and to analyse the factors that have influenced their development. The framework used for this is drawn from Leadbeater and Wong (2010), but with significant developments, described below, in order to allow for a more in-depth exploration of systemic change factors involved.

Leadbeater and Wong (2010) utilise a simple four-box framework for categorising the innovations that they study. The dimensions are: formal versus informal learning and sustaining versus disruptive innovation. Formal learning here indicates school or institution-based, while informal implies online as well as family and community-based. Sustaining innovation here implies an incremental enhancement in existing learning products, systems or processes, while a disruptive innovation implies a more transformational approach involving paradigmatic changes in the way that learning is provided or experienced. This gives four possible combinations:

- Sustaining innovation in formal learning—Improve
- Sustaining innovation in informal learning—Supplement
- Disruptive innovation in formal learning—Reinvent
- Disruptive innovation in informal learning—Transform

This framework is then developed by the author in two ways. Firstly, an assessment is made of the length, depth and breadth of each innovation.[5] Length here indicates the duration of the change, depth indicates how embedded it is, and breadth indicates how widespread it is. Secondly, the framework categorises the level of external support for change, and the level of internal ownership of change. The former of these—external support—is categorised in three areas: the level of prescription in the policy or design framework (e.g. via legislation or accountability requirements); the extent to which change is actively facilitated (e.g. through a team of dedicated advisers); and the level of funding provided to enable change. The latter–internal

[5] These headings are drawn from current work by the author with Professor Louise Stoll.

ownership—is categorised according to whether the innovation has been initiated by learning provider/s themselves, or adapted (i.e. copied/transferred) from elsewhere. More detailed descriptors for each category are shown in Table 18.2.

Table 18.3 then shows the five vignettes categorised using this revised innovation framework. Most of these categorisations can be made securely, because the definitions are clear cut and there is sufficient data available to allow for an assessment. However, in some areas there is inevitably a degree of subjectivity in making an assessment; for example over whether the depth of a particular change is shallow or deep. These definitional issues are discussed below.

The formal and informal learning boxes are all marked 'Yes' for formal learning and 'No' for informal learning except teaching Chinese, where some schools are offering Chinese as a voluntary activity in after school clubs. All five examples are marked 'Yes' for sustaining innovation, since all are aimed at improving children's learning within the terms of England's existing assessment and accountability framework. However, some can also be classed as disruptive, either because they represent a change to an existing paradigm (e.g. the 360 classroom in relation to pedagogy, or School 21 in relation to curriculum/outcomes) or a fundamental change to existing processes in the case of school-to-school support via NLEs, MATs and TSAs.

Turning to the length, depth and breadth categories, the picture is more varied. The 360 classroom took place in a single school over a short period of time and with limited success in embedding the approach. By contrast, the primary pedagogy changes appear to have been sustained between the 2005–2006 and 2010–2011 assessments (length–medium) and certainly achieves wide (i.e. national) breadth, although the drop in whole class teaching by the time of the 2010–2011 study may indicate that the approach had not become fully embedded (depth–medium). The examples of significant innovation in free schools and academies appear to be exceptions rather than the rule, so the breadth box is marked 'narrow'. The length box is marked 'medium' (the initiative has only been operating since 2010) while depth is also marked 'medium' on the basis that the changes in the more innovative examples are still being established. Teaching Chinese is categorised as length–medium, depth–shallow and breadth–narrow, on the basis that the initiative remains relatively recent, most schools involved see Chinese as an add-on to their core curriculum and proportionately few schools have engaged. School-to-school support is categorised as length–medium, depth–deep and breadth–wide, on the basis that the changes now extend over more than a decade, most schools and alliances will have a range of staff involved for at least some of their time and the approach is now in place nationally.

Turning to the external support column, the 360 classroom framework is categorised as 'loose' because although the design process was clearly defined, it was consciously aimed at generating user-driven creative ideas. The design process was actively facilitated by the Design Council, but the evaluation is clear that the lack of funding—for example for a prototype classroom big enough to enable the desired flexibility—was a hindrance to success. The primary pedagogy example is categorised as having a 'tight' framework, because the literacy and numeracy strategies were explicit in prescribing whole class teaching approaches. Facilitation was active, with consultants based on each Local Authority supporting implementation, while

Table 18.2 Innovation framework: categories and definitions for aspects of innovation in education

Formal learning	**Informal learning**	**Sustaining innovation**	**Disruptive innovation**	
e.g school or institution-based learning	e.g. Family and community-based learning	Incremental enhancement in existing learning products, systems or processes	Paradigmatic change in the way that learning is provided or experienced	
Length	**Depth**	**Breadth**	**External support**	**Internal ownership**
Duration of change: • Short - >5 years • Medium - 6–15 years • Long - 16 years+	Extent to which change is embedded into mainstream practice: • Shallow - remains an add-on • Medium - some change to mainstream practice • Deep - mainstream practice transformed	Spread/coverage of change: • Narrow - few isolated example/s) • Medium - significant number of examples, but still a minority • Wide - majority of schools/providers involved	• Framework: the policy/legislative (including accountability) or design requirements imposed on providers: tight-medium-loose • Facilitation: extent to which innovations are supported through external expertise/capacity: active-medium-passive • Funding: extent to which additional funding is provided to providers: limited-sufficient-generous	Categorised as either: • Initiate: innovation has been developed by one or more provider in response to identified needs • Adapt: innovation has been applied by provider, having been pioneered elsewhere

Adapted from Leadbeater and Wong (2010)

Table 18.3 Five English examples categorised using the innovation framework

	Formal learning	Informal learning	Sustaining innovation	Disruptive innovation	Length	Depth	Breadth	External support	Internal ownership
Pedagogy 1: 360 classroom	Y	N	Y	Y	Short	Shallow	Narrow	Framework—loose Facilitation—active Funding— limited	Initiate
Pedagogy 2: Primary pedagogy	Y	N	Y	N	Medium	Medium	Wide	Framework—tight Facilitation—active Funding—sufficient	Adapt
Curriculum 1: Free schools and academies	Y	N	Y	Y	Medium	Medium	Narrow	Framework—medium Facilitation—passive Funding—significant	Initiate
Curriculum 2: Teaching Chinese	Y	Some	Y	N	Medium	Shallow	Narrow	Framework—loose Facilitation—passive Funding—limited	Initiate
School improvement: school-to-school support	Y	N	Y	Y (processes)	Medium	Deep	Wide	Framework—medium Facilitation—medium Funding—medium	Initiate (supporting school)/adapt (supported school)

funding was sufficient, possibly generous. Free schools and academies are categorised as having a 'medium' framework, because Dunford et al. (2013) note that the originally loose policy framework for free schools was tightened up over time, while Greany and Scott (2014) note the same for the wider group of academies. Facilitation of free schools and academies is categorised as 'passive', since the government's philosophy was clearly that the role of government should be minimised, while funding is categorised as 'generous' since several billion pounds of extra funding was provided to incentivise the original wave of academies after 2010 (Finch et al., 2014). The Teaching Chinese framework is 'loose' because England's approach has lacked significant policy direction, perhaps inevitably meaning that facilitation was 'passive' and funding was 'limited'. The school-to-school support framework is categorised as 'medium', because there are clear national criteria and processes for the designation and de-designation of NLEs and teaching schools, but this prescription does not extend to where and how the schools then work. The facilitation of school-to-school support is also classed as 'medium', since the National College for Teaching and Leadership has had some limited responsibility for brokering support between schools, while funding for NLEs to support other schools has been 'medium'.

Finally, turning to the 'internal ownership' heading, the volunteer schools involved in the 360 classroom, teaching Chinese, and free schools and academies examples all initiated their involvement and therefore can be assumed to have a reasonable level of ownership over the innovation. By contrast, the primary pedagogy schools were required to 'adapt' the literacy and numeracy strategies to their contexts. For school-to-school support, there is a clear difference between those that volunteered to be designated as NLEs, teaching schools or academy sponsors (initiate) and those that are required to accept such support due to weak performance (adapt).

18.4 Discussion and Implications: Conceptualising System-Wide Innovation Issues

This chapter started by asking whether and how school systems that have been premised on 'improvement' can move to become more responsive to the ever changing needs of societies and economies? It offered a brief review of the literature relating to school and system improvement and innovation, where the assumption of policymakers in many systems has been that quasi-markets will secure innovation as autonomous schools compete for pupils and resources. In practice, the parallel focus on high stakes accountability based on student test scores and school inspections has limited innovation and enforced a narrow improvement focus. England's recent focus on developing a 'self-improving' school system offers a potential way through this impasse, by increasing school autonomy further while also incentivising school networks led by the best leaders and schools as a means of ensuring the spread of

effective practice and expertise. However, the fact that England's high stakes accountability framework has been retained makes significant innovation less likely (Greany & Waterhouse, 2016).

The chapter then summarised five recent examples of innovation in England and categorised these using an innovation framework derived from Leadbeater and Wong's and developed to reflect existing research and theory on school system reform. The framework allows for cross-case comparison of the different types of innovation in order to assess their relative significance and for an analysis of the factors that have influenced their development. In making this analysis, it is recognised that some of the categorisations are to some extent subjective, and that this is a limitation of the design, but this is not regarded as a substantial limitation since the aim is not to provide a precise categorisation, but rather to highlight patterns and systemic implications for innovation theory and policy, which are discussed below.

Assessing the categorisations in Table 18.3 raises several interesting patterns and questions.

Some patterns are unsurprising, for example that none of the examples seriously engage with Informal Learning. Others might be seen as more intriguing: for example, the 360 classroom and the free schools have some similar elements—a disruptive approach to pedagogy and/or the curriculum (School 21) and a model that is initiated by the schools themselves—yet the former is weaker on length and depth, despite having more active facilitation. Equally, how might we understand the differences between the free schools and academies programme and the school-to-school support approach? Both involve a level of disruptive innovation and are national in scope; both operate within a 'medium' policy framework (although the facilitation of school-to-school support is less 'passive' and the funding for free schools and academies is more generous); and both give participating lead schools the chance to initiate their approach. Yet, while the impact of school-to-school support, measured in terms of length, depth and breadth, is 'medium, deep and wide', the impact of free schools and academies is, as yet, 'medium, medium and narrow'. This leads to the following implications:

Firstly, asking teachers to change their practice in significant ways is risky and demanding. Even with a significant support infrastructure and a carefully designed process, the 360 classroom was not successful in conventional terms. This is not to imply that disruptive innovation in education is not possible: the School 21 example illustrates this and there are other examples in the literature (Leadbeater & Wong, 2010; OECD, 2015a). Nevertheless, the challenges and risks involved in innovation need to be carefully addressed by policymakers as well as practitioners and it may not always be possible to mitigate these. To recast the words of Thomas Edison, highly innovative schools and school systems will inevitably encounter high levels of failure.

Secondly, increasing school autonomy on its own, without implementation support and capacity building, might lead to isolated examples of innovation, but will not lead to systemic change. The free schools and academies represent a wide range of practice and so are hard to categorise, but the overall assessment of the independent Academies Commission (2013) was that academies have not used their

increased freedoms to innovate. School 21 and the West London Free School provide examples of innovation, but these appear to be outliers that are dependent on a few visionary leaders. At best, the wider group of academies and free schools might come to reflect Lubienski's (2009) finding that US charter schools are effective at translating existing innovations to new contexts and at process innovations around marketing and governance. The teaching Chinese example suggests that where there is too much reliance on local leadership agency, with insufficient investment and a weak implementation architecture, then the impact will be limited.

Thirdly, system-wide change and innovation is possible, but requires strong and sustained political support and capacity building within a values-based framework that allows for local agency and adaptation. The primary pedagogy and school-to-school support examples both illustrate the ability of England's school system to change. The primary pedagogy example appears to have been the result of a strong top-down implementation effort with relatively little scope for local adaptation and agency. This was successful in securing change across multiple schools, but the drop in whole class pedagogy by the time of the 2010–2011 evaluation may indicate that these changes were not sufficiently embedded to become sustainable, perhaps because schools were required to adapt existing approaches, with limited local agency and ownership of change. School-to-school support also required strong political leadership and some financial investment, but it differed from the primary pedagogy example in several respects. Firstly, it emerged as a tried and tested model from the London Challenge where it was pioneered by some of the leading schools, so it had a basis in practice and a set of credible champions (Ainscow, 2015). Secondly, it was based on a clear set of values: successful schools saw it as part of their moral purpose to support other schools, so while the funding incentives were important it seems unlikely that they would have been sufficient on their own. Thirdly, it was taken to scale by a national agency (NCSL) that operated a transparent designation framework but left significant scope for local agency and adaptation within the approach (Matthews and Hill, 2010).

18.5 Conclusion

The three implications identified in the previous section—innovation is risky and demanding, school autonomy on its own will not lead to systemic innovation, and system-wide change requires sustained capacity building within a values-based framework that allows for local agency and adaptation—appear significant, not least since the third one seems to contradict the OECD's (2015a) view that top-down policy is 'impotent' to effect change, while the second one provides an important counterpoint to those who argue for ever greater school autonomy with minimal central co-ordination. Rather, the challenge is to balance central control (structure) and local agency, so that innovation is encouraged and learning is spread (Wermke & Hostfalt, 2014). Neither can succeed without the other because, as Kärkkäinen (2012: 49) argues in relation to curriculum innovation, 'neither pure centralisation

nor pure decentralisation is an ideal universal solution'. What is clear though is that this requires a sophisticated set of capabilities from those overseeing public education systems. These capabilities stretch traditional conceptions of public sector governance, as Suggett (2015: 17) implies:

> School autonomy works in tandem with system capability – and it is not older style bureaucracy that is needed, but new systems that can articulate and respond to evidence-based improvement practices, and understand change management.

Building such capability requires both effective governance and systems for vertical knowledge sharing so that policy and practice inform each other. The OECD (2015a: 75) argues that knowledge management is the key to success in these contexts in order to enable systemic learning:

> Knowledge is crucial for governance and governance is indispensable for knowledge creation and dissemination. As complexity in education systems continues to increase, governance systems' capacity to learn becomes more and more crucial.

What has been less recognised in these discussions is the need for these governance models to continuously engage teachers, parents and other stakeholder groups so that they understand and subscribe to the aims of systemic innovations. Without the legitimacy that such support brings the innovations might not only fail in themselves, they might precipitate wider challenges to quasi-market education systems. New institutional theory defines legitimacy here as the acceptance of an organisation by its external environment (DiMaggio and Powell, 1983, quoted in Gibton, 2016). Governments have traditionally provided the legitimacy required for public education systems through their democratic mandate, but the development of autonomous schools overseen by 'closed managerialist networks' (Hatcher, 2014) and corporate-style chains, federations, and commissioners (Gibton, 2016) risks breaking that link, with few opportunities for electors, parents or other community groups to influence the direction of travel. Waslander (2010) provides an instructive example from the Netherlands in this respect, where pedagogic innovations initiated by school boards led to a sustained media and public backlash, driven by a concern that the traditional role of 'knowledge' was being disregarded. As a result, the government has passed new legislation which limits the autonomy of publicly funded schools—a status that had been enshrined in the constitution a century before. Waslander concludes that this was a result of the school boards losing their legitimacy, among teachers as well as parents, through a lack of good governance and stakeholder engagement; a view endorsed by the Dutch chief inspector of schools (Dutch Ministry of Education, Media and Culture, 2014: 41–42). This leads to three final conclusions:

The first is that we need a more nuanced definition of autonomy which distinguishes between 'structural' and 'professional' autonomy. Structural autonomy here denotes the extent to which the legal and policy framework formally delegates decision-making powers to school boards and/or leaders in two areas: resources (e.g. budgets/staffing) and curriculum/pedagogy. By contrast, 'professional autonomy' reflects a view that autonomy is as much about the confidence, capacity and effectiveness of school leaders and teachers and the trust placed in them by district and national

officials as it is about formal delegated powers (Bryk & Schneider, 2002). Strengthening 'professional autonomy' needs to become a higher priority than extending structural autonomy further. This could happen through the strengthening of existing lateral networks and the establishment of governance structures and agencies that can support knowledge mobilisation.

The second is that the vertical accountability framework not only prescribes the parameters for innovation in many systems, it may also condition how parents perceive and value innovation. Vertical accountability to government appears to have both a coercive and normative power over school leaders, in that it requires them to act in certain ways (backed by rewards and sanctions) and also ingrains a sense that this is the 'only way to do things'. But that same vertical accountability may also have a normative impact on parents, telling them that only the qualifications that government deems important are worthy of consideration and that only the schools that the inspectorate deems high quality are worth of choosing for their children. Thus, vertical accountability may actually condition market accountability to parents so that they require one and the same thing from schools—high test scores and good inspection judgements. Innovation appears to be a casualty of this process.

The third is the need to enhance the legitimacy of innovation in the eyes of education's key stakeholders: in particular teachers, parents and employers. Proponents of quasi-markets may see choice as conferring legitimacy on innovation: parents can choose between Latin at West London Free School, 21st Century skills at School 21, or the standard GCSE offer at most other English schools. If they are not happy they can go elsewhere. But if it is the case that these remain isolated examples and that quasi-markets are not successful at fostering significant innovation (Lubienski, 2009), then the question is not only how might change and innovation be developed systematically, but also how can any such change avoid the public backlash described by Waslander in the Netherlands (2010). Any such effort must originate with governments, since legitimacy must stem from their democratic mandate even if, in practice, they are not always best placed to champion change. This point is clearly linked to the two above: in developing the 'professional autonomy' of school leaders, it will be important to equip them with the skills needed and a fit for purpose governance framework that can secure stakeholder engagement. Equally, if the accountability framework conditions parental expectations of schools, then it stands to reason that innovations must be given some level of legitimacy by that same framework if parents are to perceive them positively.

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