School autonomy: Necessary but not sufficient

Dr Dahle Suggett, PTR Consulting
Author contact: dahlesuggett@bigpond.com

Abstract

School autonomy has become increasingly significant in the politics of education, as well as a central feature of education systems' reform policies in Australia and globally. This review examines the spectrum of evidence on the impact of school autonomy on student academic achievement, and the features of autonomy that improve or constrain achievement, and discusses the implications of these findings for future policy. There is no definitive or simple conclusion from assessing the impact of autonomy on student achievement, but neither does the evidence reject the contribution of autonomy. Rather, the evidence points to autonomy as a key and necessary component of a mature and high-performing system, as it is in other areas of public administration. However, the wider institutional context matters, and parallel policies like accountability and leadership development need to be in place. Crucially, and counter to popular conception, *more* rather than less systemic support is needed for the potential of school autonomy to be realised.

The policy to assign more autonomy to government or public schools is internationally pervasive, intensely political, and contested. Even though there is a research history of over two decades, and the number of education systems embracing school autonomy is growing, including in Australia (Arcia et al. 2011; Eurydice European Unit 2007; OECD 2013; OECD 2015; The World Bank 2007), its value continues to be debated both in ideological terms and empirically. One might have expected a settlement on a theoretical model and set of common understandings by now.

This paper focuses on the core question of whether school autonomy advantages learning. It considers a range of research into the impact of school autonomy on student achievement, and school and system performance. Other similar issues are important but beyond the scope of this review, such as school autonomy leading to the privatisation of government schooling; the introduction of for-profit schools; the contraction of government funding; the implications of expanding choice in public education; and the impact of school autonomy on equity. The more specific focus on learning outcomes responds to the persistent policy questions about evidence-based strategies to improve school performance and takes into account the more recent quantitative research on the impact of autonomy.[1]

Other reviews have found there is no definitive conclusion from assessing the impact of autonomy on student achievement, but neither does the evidence reject the contribution of autonomy. Rather, the evidence discussed in this paper points to autonomy as a key component of a mature and high performing system and that more rather than less systemic support is needed for its potential to be realised. The momentum for establishing local autonomy, flexibility, collaboration and customised services is pervasive across all public services, and there is strong evidence that it is welcomed and valued by school leaders and by many parent communities.

---

[1] The perspective on student achievement has been advocated by Brian Caldwell, Professor Emeritus and prior Dean of Education University of Melbourne, over his extensive period of research in this area. Caldwell has been an internationally recognised policy advisor to Australian and international education systems, evaluator and commentator on school based management or autonomy for over 30 years and this paper draws on his analysis and insights over this period. Since his study of decentralised school budgeting in Edmonton, Alberta Canada in 1977 to the present International Research on School Autonomy, Student Outcomes and 21st Century Curriculum Pedagogy, his views have been central to developments in this area.

The evidence shows that high performance and autonomy are linked, but uncertainty arises because certain aspects of autonomy may be more important than others, the context has to be right, and autonomy is not suitable everywhere. Strong institutional processes like accountability and leadership development are crucial parallel system features, and many schools or systems starting out on an improvement pathway from a low performance base may be disadvantaged by autonomy.

The relevant policy questions are therefore not only about the advantages or disadvantages arising from autonomy, but increasingly about the questions of when, where and how much autonomy makes a positive difference, and how the roles and responsibilities of education systems need to be re-drawn to optimise the benefits of autonomy. Contemporary policies for school autonomy may require more rather than less from education systems, and for them to be expert, facilitative and flexible. This is a very different context from where the school autonomy debate started three decades ago.

Methodology and issues with the database

The questions that frame this review of evidence are the following.

- What is the policy landscape for autonomy?
- What is the spectrum of findings on the performance impact of autonomy; the conditions for success; and the conditions that constrain success or are associated with failure?
- What can we learn from the use of autonomy in other areas of public administration?
- How might policy for school autonomy be framed in the future?

A conceptually complex issue

Autonomy is not an easily delineated system or school characteristic. First, it varies according to the range of functions over which decision making powers are decentralised. Most commonly, autonomy is focussed on the following areas (Hanushek et al. 2013; OECD 2010a):

- *Curriculum and assessment,* comprising course content: who decides which courses are offered, the content, the textbooks, and the assessments?
- *Resources*, comprising personnel decisions: who hires teachers and sets salaries and manages professional development, who decides budget allocations in the school, and whether schools can secure additional funds?
- *Student policies*, comprising responsibilities such as access, discipline and grade progression: how and by who are they determined?

Autonomy also varies in the degree of control conferred on the school and how much control is shared with other levels of administration, balanced by the changes in central administration that are introduced or strengthened to accommodate greater school autonomy (Arcia et al. 2011). The OECD (2013) has assembled two indices[2] for deriving country profiles of autonomy that reflect these differences; they show degrees of autonomy for key aspects of curriculum and assessment, and for resources and personnel.

---

[2] Numerous studies draw on the OECD PISA and other schools data and these studies increasingly utilise the indices for making country comparisons e.g. Hanushek et al. (2013).

Variable terminology and definitions

The concept of autonomy tends to be used widely in the public and political sphere (Gove 2012; OECD 2010a, 2012, 2013; Pyne 2014), but encompasses a variety of definitions and practices. Schools' increased responsibility for decision-making, rather than centralised 'command and control', has been captured by an array of terms in addition to autonomy: decentralisation, devolution, site-based or school-based management, self-managed or self-governed schools, and empowerment (Caldwell and Spinks 2013a; Gamage 2008; Arcia et al. 2011). These terms can refer to a spectrum of responsibilities for decision-making, such as decentralisation to devolution (Australian Public Service Commission (APSC) 2009) but they are also used interchangeably.

While up to 22 definitions of autonomy have previously been identified (Ainley and McKenzie 2000), Caldwell and Spinks (1998, 4-5, cited in Caldwell 2102a, 5) provide a widely-used definition that captures the flexibility for a self-managing school as one

> to which there has been decentralised a significant amount of authority and responsibility to make decisions related to the allocation of resources within a centrally determined framework of goals, policies standards and accountabilities.

In a number of countries autonomy is just signalled by reference to school type: academies in England; charter schools in the United States; free schools in Sweden; and independent public schools in Western Australia.

Evaluation complexities

With this multiplicity of dimensions one could say that each system's model of autonomy is unique when it comes down to the finer details. Such variation in the nature of autonomy leads to methodological complexities in examining the features and impact of autonomy. The research literature (e.g. Ainley and Gebhardt 2013; Hanushek et al. 2013; OECD 2012; the Victorian Competition and Efficiency Commission (VCEC) 2013) explains that studies generally do not or are unable to:

- take into account factors beyond autonomy influencing outcomes, such as cultural attitudes to education (Jensen 2012) and features such as out-of-school education time (VCEC 2013);
- take into account the positive interactions of autonomy with key success factors, such leadership and teacher quality (VCEC 2013);
- have a consistent means for determining the level of system success, because international tests such as the Programme for International Student Assessment (PISA) and Trends in International Mathematics and Science Study (TIMSS) can vary widely (Ainley and Gebhardt 2013);
- allow sufficient time for initiatives to mature and show the full extent of impact (Machin and Wilson 2008); and
- include cost-benefit analysis (VCEC 2013), which is relevant in estimating the value of policy changes in response to evidence of relatively small effects (Carnoy and Rothstein 2013).

As Caldwell (2013b) explains, research design in this area has been heavily influenced by the availability of student achievement data. In earlier eras, methodologies used satisfaction surveys, observations and normative argument, and were more focussed on management and governance. Attention shifted to measuring student outcomes in the late 1980s and early 1990s but the data were weak at a jurisdictional, national, or international level so research

used a combination of qualitative and weak quantitative data. By the late 1990s and early 2000s the major student achievement databases began to be developed, and that swung research heavily to the application of statistical models – particularly econometric modelling – to analyse the impacts of autonomy on student achievement. Standardised performance data, especially large-scale national (e.g. NAPLAN in Australia) and international data (e.g. PISA, TIMSS and PIRLS)[3] enable a finer grain of analysis and consideration of patterns of performance over a number of years.

Caldwell has identified the emergence of a new phase in analysis where large bodies of mixed data are being used in highly nuanced analyses (as in Mourshed et al. 2010), where successes and challenges are seen both through quantitative and qualitative lenses so that the complexity of educational outcomes can be more thoughtfully discussed. The need to understand both 'big data' as well as the dynamics of local implementation is a theme of growing importance, and research design will increasingly reflect this.

Selection of studies

Research databases were searched through University of Melbourne, Education Resources Information Index (ERIC) (via Proquest); OECD library; and jurisdictional websites. Sources include:

- jurisdictional evaluations (mixed methodologies: surveys, case studies and performance data where available);
- cross-country quantitative and qualitative analyses (using OECD PISA student achievement and related survey data);
- within-country research (large scale qualitative and quantitative studies in countries with a suitable volume and scope of studies);
- meta-analyses (those that provide a technical account of their selection criteria e.g. standardised tests, comparison groups, longitudinal and triangulation of qualitative data and present aggregate conclusions).

The studies were sorted according to their findings into two groups: those with neutral or negative findings (i.e. autonomy is on balance not a contributor to student achievement or could impede it); or those with mixed or positive findings (i.e. autonomy has some observable positive impact on student achievement). The review covers the period of 2000-present, with mention of studies in an earlier period for comparative reasons. A detailed breakdown of 32 studies can be found in Appendix 2.

Policy landscape for autonomy

Changing perspectives: Historical phases

The objectives of school autonomy have changed over time and this has influenced the focus of research (e.g. Caldwell and Spinks 2013b; Eurydice European Unit 2007; Wylie 2012).

Initial reforms were designed to change education governance and 'empower' those who work in and with schools to drive improvement and reduce the influence of bureaucracy (Burke 1992; Gamage 2008; Gobby 2013; Whitty et al. 1998). The 1973 Karmel Report in Australia elevated devolution to a core value of education (Caldwell 2012) as schools' local knowledge was valued over management by central authorities (Chubb and Moe 1990). This rationale continues today.

---

[3] Descriptions of these databases are in an attached glossary of terms.

In the 1980s and 1990s devolution expanded to include budgeting, staffing and planning, and merged with New Public Management's agenda to pare back the role of the state and the cost of education to enable localism, while also establishing the conditions for public sector markets to drive efficiencies and entrepreneurialism (Osborne and Gaebler 1992).

Fundamental changes followed in many education systems: England's Education Reform Act in 1988 (Whitty et al. 1998); New Zealand's *Tomorrow's Schools* reform in 1988 (Wylie 2012); Hong Kong's School Management Initiative (Education and Manpower Branch and Education Department 1991); Sweden's decentralisation reform (National Agency for Education 1997); and Finland's remarkable change in their education system around 2000 that embedded the notion of teachers' personal autonomy in a highly decentralised, lightly regulated and professionalised system (OECD 2010b). In Victoria the landmark 1992 *Schools of the Future* program embarked on extensive devolution and complementary systemic changes (Caldwell and Hayward 1997).

The rationale for these reforms has mostly been sustained into the present. Governments of varying political positions over the past 15 years have not fundamentally reversed the autonomy trajectory (Caldwell 2012). What has changed in some locations is that autonomy or devolution is now fused with notions of collaborative governance rather than justified as a market-based approach. The rationale for forming networks, partnerships and mutual accountabilities is that autonomous schools in collaborations will be better equipped to be responsive, flexible and learn from others in educating children for the unpredictability and complexity of the 21st century (Mulgan 2007; Hargreaves 2010).

Importantly, objectives have also sharpened around teaching and learning and improving student outcomes. This might not appear a remarkable shift but improving student achievement through autonomy was not the primary objective of earlier reforms. They were driven by a desire for organisational change and cost efficiencies (Summer and Johnson 1996; Malen et al. 1990). Moreover, the student achievement data were not adequate in the earlier eras for assessing improvement in learning outcomes (Caldwell and Spinks 2013a). Global education benchmarking like PISA now provides more nuanced policy options for systems to consider, such as identifying the contexts where school autonomy has a positive impact on achievement.

Current policy trends

Accounts of current policy trends in relation to autonomy (Arcia et al. 2011, Eurydice European Unit 2007; OECD 2013; and the World Bank 2007) reveal that:

- there continues to be growth in the number of countries mounting reform initiatives designed to create more autonomous school systems, and in particular, extensive growth of the existing autonomy models in United States and England (VCEC 2013);
- the drive for greater autonomy is increasingly being counterbalanced by strengthening system requirements or centralisation in areas such as targets and accountability, control over curriculum content, and teacher standards (Hanushek et al. 2013);
- access to autonomy also varies, with some systems adopting an opt-in or opt-out model, and some adopting the concept of 'earned autonomy' as an incentive where performance demonstrates the capability to be autonomous (Department of Education and Early Childhood Development 2008, Kay 2010). Others adopt the concept of 'default autonomy' where schools are assumed to be autonomous unless underperformance warrants intervention (Dixon 2011);
- the models of autonomy according to the OECD vary considerably in the functions included in the model (OECD 2013, 131,132). For example, few schools have influence

over teachers' salaries (30 percent) but most have influence over hiring (76 percent), and in just under half of the schools the principals and/or teachers decide on budget allocations in schools. In some countries (e.g. Germany and Belgium) autonomy for resource allocation is consistent among all schools whereas in others it differs (e.g. England). Most who allow autonomy in curriculum decisions also allow resource autonomy, but there are exceptions (e.g. Japan).

Policy in Australia is fluid – unlike New Zealand, which has sustained school autonomy over a number of decades and has systematically strengthened key institutional levers (e.g. regulation of qualifications) (OECD 2015). Policy positions in Australian state and territory jurisdictions appear to change with the political environment; conservative governments favour autonomy as a non-intervention stance on schools and the introduction of market-based mechanisms, whereas centre-left governments tend to more central or regional control and support to advance public schooling and address inequalities. The Victorian environment is atypical and more like New Zealand, with a steady three decades of maturity in school autonomy supported by all governments.

Mixed assessment of impact of autonomy

The tenor of findings on the impact of autonomy has differed over time. Earlier sources were mostly negative in their findings. They found that policies for school autonomy were not directed at teaching and learning, autonomy had no impact on achievement, and the policies that were being promoted were damaging the capacity of public education. One important Australian longitudinal study of principals' attitudes to the major Victorian reform (Department of Education 1998) was more optimistic in finding strong principal endorsement of autonomy, but nevertheless only an indirect and complex relationship between autonomy and improved student learning. However, student performance data were limited for the earlier studies.

While there are challenges that autonomy disguises a contraction of government responsibilities (Dinham 2014; Cobbold 2012) and perpetuates the myth of school autonomy's link to improvement (Hopkins 2013; Sahlberg 2014), most recent studies are equivocal in their findings. The empirical studies and meta-analyses discussed below identify a mix of gains and losses under different circumstances, with autonomy not exclusively tied to market-based models and not dismissed as a reform direction (VCEC 2013).

The discussion below considers firstly a selection of studies with findings of negative or no impact of autonomy on school performance, and then reviews those studies with more mixed and positive findings. The focus is mainly on the years since 2000 but some often cited early studies are included to show the longevity of the policy questions.

Negative or neutral impact of autonomy on school performance

Pre-2000 Australian and international studies of the impact of greater school autonomy mostly identified the shortcomings of the reforms' objectives and the limited impact on student outcomes. Most concluded that it is the 'packaging' of reforms and their implementation that matters rather than pursuing autonomy alone.

A meta-evaluation of 70 international studies of the effectiveness of school-based management (Summer and Johnson 1996) found that the evidence linking it with improved outcomes was non-existent or weak, and that improved student achievement was rarely an objective. Malen et al. (1990, 317) similarly found that 'school-based management does not precipitate major adaptations or innovations in the instructional component of schools', and

the closer activities get to 'the instructional core' of a school the less school-based management affects them. The same conclusion was drawn in Leithwood and Menzie's (1998) review of 80 empirical studies. An OECD report (1994) also concluded that while self-management may improve some aspects such as teacher morale, student achievement will not improve without reforming teaching and learning.

Hanushek (1996) went further, saying that without decentralisation having an explicit purpose to improve performance, the organisational change could well drive performance in the *other* direction in that schools could pursue their own idiosyncratic objectives rather than performance improvement.

A number of studies with negative findings examined the extensive reforms implemented in Victoria under the 1993 *Schools of the Future* initiative (Caldwell and Hayward 1997). They argued that the climate for teachers was profoundly different under the Victorian reform and was antithetical to the values and traditions of public education, and hence open to perpetuating inequities (Blackmore et al. 1996). Townsend (1996) argued that poorer schools were unable to take full advantage of school-based management as they were less able to raise additional finances. A study of devolution in three jurisdictions (Whitty et al. 1998) similarly concluded that there was little solid evidence to show that increasing autonomy had a positive effect, and devolution policies accentuated inequities through increasing the advantage held by already advantaged schools and parents.

Since 2000 a far smaller proportion of the studies of autonomy have strong negative findings, with the exception being evaluations of the US charter schools. Moreover, negative findings are generally explained as arising from deficiencies in how the concept of autonomy is portrayed in policy statements and the way policies are implemented, rather than an outright rejection of the concept. Other studies in England and Australia with negative findings are also included.

In the US a major initiative for school improvement has been the establishment of the charter schools. The volume of research on charter schools is growing but it is a confused spectrum of findings that appears more negative and inconclusive than positive (Toma and Zimmer 2012).

Some studies at the district level compare the results of charter and regular schools, such as a study of New York charter schools (Hoxby and Murarka 2009) that found charter schools achieve higher results for some grades in reading and maths.[4] But the methodologies of these district studies are disputed on the grounds of weaknesses in the statistical models, and overstating the effects (Reardon 2009; Raymond 2009). One meta-analysis of five district based randomised controlled trials concluded their findings did not have validity outside their specific contexts and hence were not generalizable (Dynarski et al. 2010). They could not identify what was common for success and whether being a charter school was the factor contributing to success or failure (Dynarski et al. 2010, 3):

> In summary… knowing that a school is organised as a charter school does not in and of itself say much about whether the school is good, bad or indifferent.

One comprehensive cross-state study with negative findings is a matched longitudinal comparison of learning gains in literacy and mathematics in 2400 charter schools conducted across 15 states in the United States, covering 70 percent of students in charter schools.[5] It found that 46 percent of the schools had learning gains in mathematics that are

---

[4] The methodology is potentially promising as it takes advantage of the control factor arising from the admissions lotteries for access to charter schools in that performance in the traditional schools that the students come from can be compared with any change in the performance outcomes of the charter schools.

[5] The 'matching' was through including a virtual twin created for charter school students based on equivalent demographics, socio-economic status, English language proficiency, and special needs.

indistinguishable from the average growth among the comparator schools; 37 percent were significantly below what students would have achieved in their comparator schools (i.e. if they had stayed in the public system); and 17 percent significantly exceeded the growth in the comparator schools (Raymond 2009). Other studies, such as Miron et al. (2008), are similar.

Raymond (2009) concluded that the wide differences in performance lie in the varying design of institutional structures for establishing and monitoring charter schools, such as systems enabling a choice of monitoring bodies, and schools 'gaming' the system. This raises the need to take into account variability in implementation, including school practices and the design of education system support structures that are faithful to the policy intent (VCEC 2013).

A further study of mathematics and reading performance using meta-analytic techniques (Betts and Tang 2011) found that while some charter schools outperform public schools in some locations, grades and subjects – especially in elementary school reading and middle school mathematics and reading – others provide 'compelling evidence' of underperformance. Many register no impact either way, 'neither innovating successfully nor innovating and failing but simply replicating the standard fare in traditional public schools' (Betts and Tang 2011, 4). In this sense, the choice of autonomy surprisingly does not imply a school's intention to exercise local decision making to change the traditional mode of organising and teaching.

Overall, the consensus appears to be that charter school performance is 'complex and difficult to measure' and the results are 'sobering' (Raymond 2009, 2) but this is a somewhat unsatisfactory and puzzling finding, given the continued growth in popularity with parents and the community (Toma and Zimmer 2012) .

English studies are growing and the research field is unpredictable because of recent rapid growth. While findings are mostly positive with qualifications (e.g. NAO 2007, 2010), one study (Hutchings et al. 2014) with mainly negative findings examined student achievement in chains of academies – groups of academies that operate with a formal collaborative structure. The study compared grade results at the General Certificate of Secondary Education level (GCSE) with socio-economic disadvantage within and between academy chains and with the mainstream over 2010 to 2013. The results show that there is wide variation in outcomes, particularly for disadvantaged children, and on the whole the chains of academies underperform for disadvantaged students compared to the mainstream. Five chains out of 31 studied are achieving high attainment and around half appear to exceed the mainstream average, but when they were analysed against government indicators rather than their own, a majority of chains fall short of the mainstream in performance.

Again, the findings point to the importance of administrative design and implementation for success. Some of the academy chains were too large to gain benefits. Successful chains strategically use their accumulated knowledge of school improvement and collaborate effectively, whereas rapid growth puts this at risk.

Australian empirical studies are not comprehensive due to the relatively short history of autonomy policies outside of Victoria. Jensen (2013) observed from comparing Victoria and NSW in literacy and numeracy assessments that NSW, the system with less autonomy, has equivalent or higher performance than Victoria, which is internationally known for a high degree of school autonomy. The proposition is that autonomy is not a deciding factor in student achievement and school performance and those factors outside of the autonomy dimension are of equal or more importance. The Australian environment warrants further analysis, and this would be of considerable international interest.

A further finding of neutral or negative impact is that autonomous Australian schools do not take advantage of the scope for decisions they have. Drawing on Australia's 2008 OECD data for the Teaching and Learning International Survey (TALIS), Jensen found not only that

the 'differences are not stark' (2013, 30) between high autonomy independent schools and low autonomy government schools, but that practices for the important elements of teacher development and performance appraisal are not that strong irrespective of autonomy status (Jensen and Reichel 2011, Branch et al. 2013). A high level of autonomy does not in this case translate to significantly better teacher employment practices, leaving open the question as to what enables good human resource practices. Jensen concludes that autonomy is not a key factor.

The post-2000 studies that identify a negative or neutral impact of autonomy on performance tell us that looking for a simple cause and effect relationship is ill-advised. Where there are negative or no impacts, explanations most likely lie in the varied contexts and implementation details rather than in the outright failure of autonomy *per se*. The explanations offered include:

- the constraints or weaknesses of institutional structures such as administrative rules and monitoring methods that operate alongside autonomy (Raymond 2009, Hutchings et al. 2014);
- the limited capability of some autonomous school leaders for innovation and managing change versus simply replicating traditional practice (Betts and Tang 2011);
- the length of time needed for the impact of autonomy on a school to mature (NAO 2010);
- the need to identify and take more account of the interrelationship of numerous factors that operate alongside autonomy and may inhibit its potential (Jensen 2013); and
- the conclusion that factors close to teaching and learning have an impact on performance, but many administrative adjustments used to promote greater school autonomy do not have an effect (OECD 2005).

Studies identifying a positive or mixed impact of autonomy

Studies finding that autonomy has a positive impact on student achievement are predominantly in the post-2000 era, although one pre-2000 study with positive findings is the evaluation of the significant 1993 Victorian Government *Schools of the Future* reform that laid the foundations for school autonomy in that state for the subsequent two decades.

Post-2000 studies mostly use quantitative performance measures to evaluate outcomes, and the analysis is far more nuanced as the national and international student and teacher databases expand and the interpretation differentiates more finely among factors. In particular, cross-country studies by or in conjunction with the OECD use large scale data sets and are becoming the centre-piece of this field of enquiry.

Pre-2000 endorsement of autonomy by principals

In Australia, the landmark study of the 1993 Victorian Government *Schools of the Future* was a five year longitudinal study with seven state-wide surveys of principals' experience with, and attitudes to, school autonomy (Department of Education 1998). The survey methodology can be challenged for selection and self-reporting biases, but as Caldwell (2012) has explained, methodologies were significantly constrained until recently by the lack of quantitative performance data.

The reform involved 1700 Victorian Government schools re-structured in phases with the primary objectives being to improve learning outcomes, build teacher professionalism, and 'allow principals to become true leaders in their schools' (Department of Education 1998, 19). It involved decentralisation of 90 percent of the school's budget (the key feature), and

local selection of teachers, counterbalanced by an accountability system, state-wide literacy and numeracy testing, and a statement of agreement between the school, community and government.

A baseline principal survey identified 25 expected benefits, and subsequent stratified sample surveys assessed progress towards their attainment. Two sets of findings are instructive. First, there was a resounding 89 percent support among principals to continue school-based management (Department of Education 1998, 79). Momentum from this strong endorsement has continued and degrees of autonomy might be debated, but the assumption that schools have major decision-making and management responsibilities is now deeply embedded in the culture and operation of Victorian schools (Dixon 2011).

Second, the results showed the strength of the indirect rather than direct interconnections between principals' perceptions of how autonomy does or does not advance learning (Caldwell 2012). Through structural equation modelling an explanatory model of seven constructs identified the direct and indirect effects among factors (such as planning and resource allocation benefits, personnel and professional benefits, and curriculum support) that influence principals' perceptions of positive learning benefits arising from greater autonomy.

More recently, similarly positive principal perceptions were evident in NSW and WA reviews of their respective autonomy pilots (Department of Education and Communities 2012; Centre for Program Evaluation 2013). Similar to the earlier study of the Victorian *Schools of the Future*, most principals readily recognised that it is 'not possible to unpack the effect of pilot initiatives from the overall activity and other initiatives in operation in the school' (Department of Education and Communities 2012, 7).

Findings show that principals mostly value autonomy but rarely attribute improved student outcomes to autonomy alone. Rather, they see the complexity of the interconnections (as more detailed subsequent studies using performance data have shown (OECD 2010a, 2013)), even when their central authorities may not.

Post-2000: Using performance data

Every three years since 2000, large sets of cross-country and within-country outcomes data and system characteristics have been available from the OECD's PISA tests and surveys. The data have enabled impressive analysis of autonomy's impact on student achievement, with some aspects becoming clear but many aspects remaining opaque. Macro global data show clear patterns of association between autonomy and performance but the closer the analysis is to the specific characteristics of individual systems, the more the conclusions and policy implications are circumspect. Possibly the strength of the large datasets needs to be counterbalanced by more in-depth and reflective qualitative studies.

OECD's cross-country analysis: Positive but complex picture

The OECD's current analytical framework for assessing the impact of school autonomy on performance comprises two composite indices developed from surveys that accompany PISA tests. Firstly, an index of school responsibility for *resource allocation* (formulating school budgets and allocating them within the school; appointing and dismissing teachers; determining teachers' starting salaries and salary raises); and secondly an index of school responsibility for *curriculum and assessment* (establishing student-assessment policies; choosing textbooks; and determining which courses are offered and the content of those courses).[6]

---

[6] See OECD (2012, 131–132) for figures that measure and compare countries' autonomy for resource allocation and for curriculum and assessment. Both indices have an average of zero and a standard deviation of one. Higher values indicate more autonomy for school principals and teachers

   Correlational analysis of the indices with the OECD's 2012 PISA performance data (OECD 2013, 52 and 53) shows the conditions under which there is a positive association between performance and autonomy, where there is not an association, and indeed where autonomy might be a disadvantage.

   Comparisons among education systems are reasonably clear in showing that where schools are in systems that have more autonomy for decisions over curricula and assessment they tend to have better results in student performance than in systems that have less autonomy for deciding curriculum and assessment. This also applies when taking national income into account (correlation of 0.58). For example, across OECD countries the trend line shows Japan having the highest level of autonomy over curriculum and assessment and Greece having the lowest, with a mathematics performance difference between the two of 83 points – approximately two years' difference in achievement (OECD 2012, 51).

   Autonomy over curriculum and assessment is identified as one of the four common characteristics of successful school systems – that is, those achieving above the OECD average (OECD 2010a, 29). In contrast, greater responsibility in managing resources appears unrelated to a system's performance.

   Within-country relationships between school autonomy in resource allocation/curriculum and assessment/performance are far more complex and the differences are slight. In addition, the relationship is influenced by other factors such as socioeconomic level, status as a public or private school, and the system's management environment – in particular its accountability framework.

- Within countries, there is an interaction between autonomy and accountability mechanisms (such as the public release of all students' assessment results), such that when schools are part of school systems with strong accountability and more autonomy for resource allocation they tend to perform better than schools with less autonomy, although the performance advantage is relatively small.
- Where a country does not have a strong accountability system, schools with greater autonomy in curriculum and assessment tend to perform slightly *worse* than those with less autonomy. In assessing reading in PISA 2009, a student attending a school with greater autonomy in a low accountability environment was 6 PISA points lower than a student in a school with less autonomy (OECD 2010a). In science in 2012, the difference was nine points lower (OECD 2013). This corresponds to approximately a two-month and a three-month learning disadvantage respectively.[7]
- The reverse applies for schools with autonomy in curriculum and assessment that are in systems with strong accountability. These schools perform better – in reading in 2009 a student scored 5 points higher in an autonomous school in a high accountability environment, and similar for mathematics in 2012 (5 points higher).
- The relationship between school autonomy and performance is also positively influenced by the 'culture of collaboration between teachers and principals' (OECD 2013, 53), with relevance to the subsequent discussion of leadership dimensions and structures that build capability and enable schools to benefit from autonomy rather than just replicate conventional practices (OECD 2013, 130).

---

[7] While these are statistically significant differences in econometric modelling, from a social science perspective they are very small gains in a complex environment and so raise the question of predicting overall value. Carnoy and Rothstein (2013) consider countries' scores to be 'about the same' if they are fewer than 8 test scale points different, to be 'better' or 'worse' if they are at least 8 but fewer than 18 scale points different, and 'substantially better' or worse if they differ by 18 points or more. Eighteen points in most cases is approximately equivalent to the difference social scientists generally consider to be the minimum result of a worthwhile intervention (an effect size of about 0.2 standard deviations).

Identifying critical institutional structures

A special note on autonomy and accountability, *PISA in Focus*, recognises the complexity of countries' policy environments and argues that autonomy and accountability need to be 'intelligently combined' (OECD 2011, 1) for student achievement to improve. Policies need to be finely adjusted to meet the needs of a specific context, rather than seen as one-off isolated policies that can be replicated.

Different types of autonomy interacting with different degrees of accountability have different effects on the level of student achievement across countries (Woessmann et al. 2008). Econometric modelling[8] shows students perform better in autonomous environments where accountability policies pertain to students (external exit exams), teachers (monitoring of lessons), and schools (assessment-based comparisons). Students perform better on average in schools with hiring autonomy, and worse in schools with autonomy in formulating budgets, possibly due to the scope for opportunistic behaviour. School autonomy over the budget, salaries, and course content appears to be more positive when external exit exams hold schools accountable for their decisions. The impact from the interrelationship between the fullest theoretical forms of accountability and autonomy is estimated in this study at more than one and a half year level equivalents of learning. A related study found that the positive relationship between accountability and autonomy supports improved the achievement of low socio-economic students; indeed autonomy, accountability (and choice) are 'tides that lift all boats' (Schutz et al. 2007, 34).

Other pre-conditions for autonomy also matter – a resounding conclusion is that autonomy does not make sense everywhere. Hanushek et al. (2013)[9] found it works best and drives improvement where economic development is advanced and there are strong institutional structures, but where they are weak autonomy may in fact damage achievement.[10] In considering the impact of within-country changes to autonomy, they show that increasing autonomy positively affects student achievement in developed and high performing countries (for a high income country with strong institutions like Norway the positive effect could be as large as 0.53 of a standard deviation), but undermines student achievement in developing and mid-level income countries – particularly where the reforms open up curriculum decisions to the school level (such as in Argentina where a move to full autonomy may have led to a drop of 0.35 of a standard deviation).

Conversely, decreasing autonomy positively affects performance in developing countries (e.g. Brazil, Chile and Mexico), but negatively affects performance in developed countries. At the high end of development and achievement, Germany is the standout example of a developed country with increased achievement and increased autonomy (from a low base). Other countries such as Great Britain and Denmark, they argue, slightly reduced their autonomy through increased centralisation (as in the introduction of national curriculum standards) and performance dropped. The authors include Australia in this category.[11]

Variations in the impact of autonomy on performance might also be associated with how systems tailor their institutional structures according to what their schools need. The

---

[8] This comprises cross-country student-level multiple regression analyses on PISA 2003 data to ascertain country variation in student achievement in relationship to the institutional features of autonomy, accountability and choice.

[9] Hanushek et al. (2013) drew on a panel dataset constructed from four waves of PISA across 2000-2009 comprising over one million students in 42 countries, and an empirical model that removed the most significant obstacles to the identification of the effects of autonomy.

[10] Hanushek et al. (2013, 215) point out that this is consistent with evaluations within countries, where autonomy has been found to widen the distribution of outcomes because of differential impacts related to the socio-economic backgrounds of families. It is also similar to the comparative review of the literature by Arcia et al. (2011) that finds few cases of positive effects of school-based management reforms in Latin America but substantial positive evidence in Europe.

[11] These effects are more pronounced for full school-level autonomy, rather than decision-making shared between school and government authority, and in areas related to curriculum content – somewhat less for personnel management and budgets.

extensive McKinsey quantitative and qualitative analysis of countries' policies that have driven consistent improvement[12] found a correlation between 'a system's performance stage and the tightness of central guidance to schools' (Mourshed et al. 2010, 20). School autonomy is a significant characteristic of approximately two-thirds of the systems moving from 'great to excellent' (e.g. Saxony Germany, Ontario Canada, and Hong Kong) and around one-third of those who have moved from 'good to great' (e.g. England). Other systems in moving from fair to good (e.g. Poland, Long Beach California and Boston) and poor to fair performance (e.g. Chile) have used more centralised direction setting and explicit school supports, particularly in teaching and learning.

The improving systems that are further along the PISA performance scale sustain improvement – or self-improvement (Hargreaves 2010; Levin 2010) – by developing:

- flexibility and teacher professionalism (Department of Education and Early Childhood Development 2009; Elmore 2006; Hattie 2009; Jensen 2012, 2014; and Mazano et al. 2001);
- school or district level collaboration (Hopkins et al. 2011); and
- the mutual accountability that can be developed with greater school autonomy.

These systems already have infrastructure, such as data tracking, accountability and finance systems, and the self-improvement trajectory is enabled by this strong foundation (Mourshed et al. 2010, 20):

> The systems moving from good to great and excellent, characterized by more highly skilled educators, provide only loose guidelines on teaching and learning processes because peer-led creativity and innovation inside schools becomes the core driver for raising performance at this level.

The study concludes that increasing centralised control in these systems actually works against sustained improvement. By contrast, in supporting the improvement journey of those lowest on the PISA scale, support centres on specific directions to get all schools to a minimum quality standard, and the introduction of explicitly common processes.

Summing up the quantitative studies

Quantitative studies drawing on the OECD's PISA data from 2000 and associated surveys are now opening up far finer-grained analysis of the impact of autonomy on performance, and enabling researchers from outside the education field to contribute their perspectives. At the global level patterns are emerging on the impact of autonomy, but at the within-country level the picture remains opaque. However, some inhibitors and enablers are becoming apparent.

- In cross-country comparisons, schools in systems which have more autonomy over curriculum and assessment decisions tend to have better performance than schools in systems with less autonomy for curriculum and assessment. In contrast, autonomy over managing resources appears unrelated to a system's performance.
- When looking at within-country elements the relationships between autonomy and performance are even more complex. The institutional context for autonomy matters, and accountability in particular makes a difference. Where accountability is weak, autonomy in both managing resources and determining curriculum and assessment can

---

[12] Analysis of PISA data and 200 structured interviews in 20 consistently improving education systems across four levels of improvement from poor to excellent (Mourshed et al. 2010).

in fact worsen performance. Where accountability is strong, autonomy is an advantage, although how much autonomy and where also makes a difference. Some studies find autonomy in hiring staff can make the difference alongside freedoms in curriculum and assessment.

- A country's level of economic development also matters; where countries are not well developed and do not have strong institutional structures, autonomy has led to decreased performance over time.
- Improved performance is also apparent when education systems tailor the level of autonomy to the level of performance of the system. Evidence shows that systems moving from 'good to great' have mostly increased autonomy. Systems that have achieved improvement in the poor or fair range, on the other hand, have exercised far less autonomy and provided more guided direction.

System lessons in autonomy and implementation

A recent strand of research explores the factors that are emerging as central to the effective implementation of policies for autonomy, on the assumption that school autonomy does not automatically require education systems to withdraw support from schools. Rather, success requires carefully calibrated timing and support. This takes into consideration aspects such as leadership and management capabilities in an autonomous environment, and the responsibilities of district or regional levels of education systems in tailoring system design to school and system needs so as to realise the benefits from autonomy. These are framed in this section as education system responsibilities.

Capability for leading

As more power is transferred to schools, the capability of principals to exercise astute decision making is crucial (Leithwood 2007, DSCF 2009, Branch et al. 2013). However, principals' capabilities for a new style of leadership vary (Trimmer 2013), and they require preparation and development for the changed role (Pont et al. 2008). Studies mostly find that principals' capabilities for autonomous environments are not being sufficiently addressed by their education systems. The policy change to introduce autonomy can be relatively abrupt, but considering the dynamics of change over time and meeting leaders' development needs may remove a major obstacle to successful implementation.

Australia Two studies of governance in Western Australian schools identified that principals vary in their capacity for reasoned local decision making according to experience and their perception of regulations (Trimmer 2013). The studies modelled factors affecting principals' perceptions of the regulatory framework and risk-taking in local decision-making through a stratified random sample in 235 schools

The tension that arises between making local decisions and complying with centralised regulations is an unspoken and unaddressed feature of the difficulty of implementing school autonomy policies. Principals with a compliance view of governance were less likely to take reasoned risks and hence the benefits of school autonomy may not be fully realised – a point made previously by Betts and Tang (2011), who found no essential change from traditional organisational practices in many charter schools. This leaves open the question of how best to support principals to progressively expand their decision-making capacity.

England Similar leadership and organisational challenges are identified in England. Higham and Earley (2013) examined the views of 2000 principals from English academies and other schools through a methodology that triangulated findings from multiple

overlapping surveys and case studies. The purpose was to analyse how principals regard autonomy's benefits, opportunities and challenges.

Significant differences were apparent among principals. The authors proposed a typology of principal capacity – confident; cautious; concerned; and constrained. Only a few were at the 'confident' level. Higham and Earley (2013) concluded that with the reduction in government supports, there is the likelihood that principals' capabilities for working in an autonomous environment will not be further developed. At best they will be unchanged, and at worst deficiencies will be exacerbated. The Academies Commission enquiry (2013) similarly identifies leadership capabilities as warranting far greater attention and support for effective implementation.

Cross-country analysis Two studies also examine the importance of the strength of management and leadership for improved performance in autonomous environments, and identify the practices that comprise good leadership (Di Liberto et al. 2013; Bloom et al. 2014). They identified through meta-analysis and principal surveys that successful autonomous schools, such as charter schools, academies and equivalent examples in other countries, have significantly higher management capabilities than regular government and private schools. Correlations indicate it is most likely *how* the leaders exercise the opportunities from autonomy that makes the difference – as in strategic planning, personnel development and being accountable to a governing body.

But an overriding question commonly debated is whether good leadership requires the full scope for decision making that autonomy enables, or whether good leadership occurs irrespective of autonomy. Caldwell[13] has assembled a full suite of research findings on the strength of the relationship between principals' leadership and student achievement. In particular, he examined what is gained from the exercise of leadership in an environment of autonomy and what aspects of leadership can be exercised irrespective of degrees of autonomy. Again the conclusion is equivocal – leadership is critical for good performance and autonomy facilitates good leadership rather being a prerequisite.

District or regional system responsibilities

Numerous recent studies point to the complexity of the interconnections between autonomous schools and centralised or district system support, and conclude that education systems need to clarify their roles and change their responsibilities to complement the changing status of schools.

United States The identification by McKinsey (Mourshed et al. 2010) of the performance benefits from tailoring a system's strategy according to schools' needs is also the conclusion from a review of US empirical studies and government led evaluations of autonomy initiatives conducted since 2005.[14] Honig and Rainey (2012) looked at autonomy in government schools, other than charter schools, and included reviews of pilots and similar in Boston Public Schools, Chicago Public Schools, Los Angeles Unified School District, New York City Public Schools and Oakland Unified School District.

On the one hand, the pilots have better performance than the earlier 1980s and 1990s site-based management schemes, mainly because they now focus on improving teaching and learning and capacity-building as known contributors to school improvement. However, the results remain 'quite limited', possibly due to persistent administrative barriers and

---

[13] This is a contribution to an international research project on school autonomy, student outcomes and 21st century curriculum, <educationaltransformations.com.au/international-research-school-autonomy-student-outcomes-21st-century-curriculum-pedagogy>

[14] Forty-three reviews and policy evaluations were selected for Honig and Rainey's (2012) meta-analysis of US non-charter initiatives; they are a mix of research studies and evaluations commissioned by authorities (reflecting the relative newness of the policies) and in most cases they were able to triangulate evidence.

incomplete implementation of the promise of autonomy by central authorities. Where significant gains were made, as in Oakland where 'after 5 years, an average student would be gaining 5 percentile points per year beyond what they would have gained in a non-participating school', there was also evidence of sustained central authority support for reform, alongside schools having greater autonomy (Honig and Rainey 2012, 477).

England The need for a new style of institutional support – a self-improving system (Hargreaves 2010; Sandals and Bryant 2014) – is now part of the debate around English academies, which now represent a fiercely contested change to English schools (Eyles and Machin 2014). While research on academies initially painted a mixed picture (Machin and Wilson 2008; PWC 2008) it appears a more positive story is emerging than for the somewhat comparable charter schools and other autonomous models in the United States (Machin and Vernoit 2011). The Academies Commission and others acknowledge progress but call on a greater and 'more determined focus on the detailed implementation of the academies programme to ensure that it realises its transformative potential' (Academies Commission 2013, 4).

Academies are making progress under certain conditions. Eyles and Machin (2014) and before them Machin and Vernoit (2011) conducted well-structured before-and-after quantitative studies for the period 2001–2002 and 2008–2009. They examined progress in pupil intake and achievement in academies by comparing what happens before and after conversion for pupils attending schools that do and do not convert to an academy. Their strong findings were that those with the largest increase in their school autonomy (as in, changes in head teachers, management structure, and curriculum) relative to their predecessor school showed the greatest improvement, but that time is needed for benefits to develop.

However, unanswered questions remain about options for the other academies with less transformative changes and improvement. The Academies Commission (2013) recognised this and concluded that academy status is not in itself transformative or a 'panacea for improvement' but that autonomy needs to be assiduously exercised to build collaboration, mutual learning and system leadership – as in collaborating to improve teacher quality. The commission calls for a greater focus by the system on improved teaching and learning; for fairness in access; and for accountability to families and the system to be strengthened. These are recommendations not only for academies but for changed government responsibilities.

New Zealand Wylie (1999, 2007, 2012) has similarly broadened the scope of school autonomy analysis to include a more detailed investigation of the role of education system supports. Her 2012 meta-analysis draws on qualitative and quantitative research by the New Zealand Council for Educational Research and the New Zealand Education Review Office on New Zealand's *Tomorrow's Schools* reforms since 1988 – possibly the most radical and longstanding of school autonomy reforms. The meta-analysis is supplemented by interviews with other autonomous systems such as Edmonton in Canada.

Wylie (2012) finds that it has taken almost two generations before New Zealand has seen lifts in student achievement. New Zealand is now in the top performing range in PISA international country rank orderings, but as with Australia, falls short in comparisons on equity. Using New Zealand Council for Educational Research principal surveys over the first decade and a half, she attributes improvement to strengthening institutional structures such as the qualifications framework, rather than school autonomy alone (2013, 46).

Sweden provides a further example of a massive decentralisation change started in the early 1990s. Sweden has now reached the point of reconsidering the role of the education system in supporting autonomous schools (Blanchenay et al. 2014). (The establishment of Free Schools were part of this long run restructuring process.) This deeper analysis of the implications of decentralisation was triggered by PISA results identifying that student

performance was deteriorating and the gap was increasing between and top and bottom performers.

Blanchenay et al. (2014, 5) concluded:

> [D]ecentralisation took place without enough support from the central authorities, municipalities (particularly smaller ones) lacked local capacity to manage their new responsibilities, and as a result the reform has resulted in a mismatch between official responsibilities and the actual powers of the various stakeholders. The central government, steering education at arm's length, has few tools to incentivise compliance with national goals.

So, rather than narrowing the focus on autonomy and its impact, the analytical frame being adopted in a number of locations includes re-examining the value of systems and the associated interactions between government, schools and community that enable schools to exercise their autonomy. Wylie (2007, 62) concludes that contemporary economic and social challenges for New Zealand and increasing expectations of education in national productivity cannot be met by self-managing schools alone; there is an explicit need for 'new ways in which schools and government can work together'. Wylie refers to the need for 'positioning schools within more collective systems' (2012, 3), as 'there has been a price to pay for taking self-management so literally' (2012, 8). The focus needs to shift to 'knowledge-sharing and connection-building that fuel deep and wide development' (2013, 47).

Summing up system lessons

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. New systems need to be efficient and effective.

- Leaders vary in their capabilities to lead autonomous schools. Without the variation in capability being addressed through better selection and skills development, some leaders proceed as they have always done and may simply replicate past practices and fail to take advantage of the opportunities for improvement. A more dynamic developmental model for progressively building principals' skills is called for (Trimmer 2013; Higham and Earley 2013).
- Evaluations of England's academies, US autonomy pilots, and European systems consistently find the need for a new style of implementation support by education systems. This is not about reinstating centralised management but more tailored facilitative support (The Academies Commission 2013; Honig and Rainey 2012; Blanchenay et al. 2014).
- Evaluations also conclude that system design and system support are crucial factors in success. There is evidence that supports need to be differentiated according to context and capability (Mourshed et al. 2010).

Conclusion

The drive for autonomy in schools is well supported by wider reforms in 21st century public administration for more responsive, local, flexible and innovative services. Decentralisation, devolution and autonomy are global themes in reform of wider government administration – not just education (OECD 2001). Major structural reforms in Australian governments over a number of decades have progressively shifted areas like employment services, welfare provision and health services to more decentralised or devolved models for financial

management, regulation, accountability, and program administration (Nethercote 2003). In Australia as elsewhere, devolution of authority to the local level is seen as a way to meet changed community expectations for more choice and variety (APSC 2009).

But in considering the impact of autonomy for schools on student achievement, there is no definitive conclusion in favour of autonomy; neither is the contribution of autonomy rejected. This is a difficult position for policy makers.

On the one hand, school autonomy is intrinsically valued by school leaders, and policies to expand the scope of schools' decision-making responsibilities are gaining momentum in many jurisdictions, mostly with bi-partisan support.

On the other hand, autonomy is highly variable in how it is applied, and early as well as later studies identify the complex and uncertain interconnections between autonomy as a structural reform and improved teaching and learning. Studies also identify that autonomy is not appropriate for all systems, depending on the level of economic development, the strength of institutional structures, and the performance and capability of schools. Where these are weak, autonomy at the wrong time can damage rather than enhance performance.

To move the discussion forward, as a number of reviews of autonomy have identified, it is time to rebalance the discussion away from a sole focus on the pros and cons of autonomy, even though the availability of global school performance data invites deeper analysis. It is time instead to consider autonomy as one element interacting with other factors that are consistently identified as improving student and school performance. The strength of the links between autonomy and high quality leadership; hiring and professional development of teachers; evidence-based teaching and learning; and tailored curriculum and assessment varies (e.g. Department of Education and Early Childhood Development 2009; Hattie 2009; Hopkins et al. 2011; Mazano et al. 2001; Levin 2010), but the need to locate autonomy as a policy lever in relation to these is apparent.

Rebalancing the discussion brings the capability of school systems into the equation. Reviews of a number of jurisdictions with well-established school autonomy but uneven performance are identifying the responsibilities of their education systems to more closely support the implementation of effective school autonomy reforms.

One review (VCEC 2013, 76) concluded

> The upshot is that, notwithstanding the evidential uncertainties, the debate is not in fact about whether there should be devolved decision making. Rather it is about how far it should extend, through what means it should be given effect, and how to make sure schools are accountable for the decisions they make.

The health sector may offer lessons for education (VCEC 2013). The success of governance devolution to Victorian health service boards and collaboration through networks is notable, and demonstrates how independent and resourced governance in the health sector has driven and sustained performance improvement. There are similarities between health networks in Victoria and regional boards for school governance in Ontario, Canada. They both bring together skills and accountability in a strong system of 'middle layer' governance that can increase the benefits from a highly devolved environment through minimising the risks from removing system supports (VCEC 2013).

Lessons can also be drawn from the health sector in England, where the notion of *earned autonomy* has been embraced as a key performance management regime (Kay 2010). In theory, earned autonomy establishes a clear continuum of responsibilities and accountabilities for performance and a known 'graduated response' to high or low performance (Commonwealth of Australia 2013). In health it appears there is a more developed theoretical position on autonomy, enabling discussion of the components of autonomy that are most valued as an incentive and most useful to improving performance. The incentives,

'freedoms', performance metrics and research parameters seem more definitive than in education, and an effort is made to understand what the sector values (Bossert et al. 2000; Anand et al. 2012; Custers 2008; Mannion et al. 2007).

While in some respects results from autonomy in the health sector are as equivocal as in education, that sector seems better placed to discuss autonomy, measure its impact and adjust policies and supports accordingly.

A more rounded and nuanced perspective on system design for autonomy is now needed in the education sector so that there is a theoretical underpinning. We need answers to the questions of rationale, value, priorities, levers and expected outcomes – i.e. the 'why', 'when' and 'how much' questions of system design. System responsibilities to enhance and add value to school autonomy might therefore include the following:

- *Institutional levers* e.g. clarity around the 'freedoms' that apply; clearer links to governance responsibilities and capabilities; building a facilitative 'middle layer' in administration; and 'responsive' regulation of implementation, including formative accountability systems as well as summative.
- *People development levers* e.g. leadership standards and assessment for autonomy; strong professional support systems; and peer accountability.
- *School improvement levers* e.g. analytical tools and data tailored for schools' needs rather than compliance; collaborative networks; and systemic design for innovation and sharing.
- *Resource management levers* e.g. ensuring financial management capability; sharpening financial accountability processes; and better advice on resource efficiencies.

By establishing a more definitive 'theory of autonomy' it is then possible to recast systems' responsibilities to support schools. This is not about reinstating centralised management but rather about establishing facilitative relationships that involve capability assessments, professional development, and interventions where appropriate. The key policy tasks are not only about refining the features of autonomy for schools, but also redrawing the role and responsibilities of education systems to optimise the benefits of autonomy.

References

Academies Commission 2013. *Unleashing Greatness: Getting the Best from an Academised System*, <www.thersa.org/__data/assets/pdf_file/0020/1008038/Unleashing-greatness.pdf>.

Ainley, J and Gebhardt, E 2013. *Measure for Measure: A Review of Outcomes for Australian Education,* Australian Council for Educational Research, Melbourne.

Ainley, J and McKenzie, P 2000. School Governance: research on educational and management issues, *International Education Journal*, 1(3): 139–151.

Anand, P, Exworthy, M Frossini, F and Jones, L 2012. Autonomy and Improved Performance: Lessons for an NHS Policy Reform, *Public Money and Management*, 32(3): 209–216.

Arcia, G, Macdonald, K, Patrinos, H and Porta, E 2011. *School Autonomy and Accountability, System Assessment for Benchmarking Education for Results, Regulatory and Institutional Framework,* World Bank, Human Development Network, Washington, DC, <siteresources.worldbank.org/EDUCATION/Resources/2782001290520949227/School_Autonomy_Accountability_Framework.pdf>.

Australian Public Service Commission 2009, Policy Implementation through Devolved Government, Contemporary Government Challenges, Australian Government, Canberra, <www.apsc.gov.au/data/assets/pdffile/0003/6843/devolvedgovernment.pdf>.

Betts, J and Tang, Y 2011. *The Effects of Charter Schools on Student Achievement,* University of Washington, Centre on Reinventing Public Education

Blackmore, J, Bigum, C, Hodgens, J and Laskey, L 1996. Managed Change and Self-Management in 'Schools of the Future'. Leading and Managing, 2(3): 195–220

Blanchenay, P, Burns, T and Köster, F 2014. Shifting Responsibilities - 20 Years of Education Devolution in Sweden: A Governing Complex Education Systems Case Study, *OECD Education Working Papers*, No. 104, OECD Publishing, Paris, dx.doi.org/10.1787/5jz2jg1rqrd7-en

Bloom, N, Lemos, R, Sadum, R and Van Reeden, J 2014. *Does Management matter in schools?* National Bureau of Economic Research, Working Paper 20667, <www.nber.org/papers/w20667>.

Bossert, T, Beauvais, B and Bowser, D 2000. *Decentralisation of Health Systems: Preliminary Review of Four Country case studies,* Major Applied Research 6, Technical report 1, Partnerships for Health Reform, Harvard School of Public Health, <www.hsph.harvard.edu/ihsg/publications/pdf/DecentralizationOfThe HealthSystemInZambia.pdf>.

Branch, G. Hanushek, E and Rivkin S 2013. School Leaders Matter: Measuring the Impact of Effective Teachers, *Education Next*, Winter: 63–69.

hanushek.stanford.edu/publications/school-leaders-matter-measuring-impact-effective-principals

Burke, C 1992. Devolution of Responsibility to Queensland Schools: Clarifying the Rhetoric, Critiquing the Reality, *Journal of Educational Administration*, 30(4): 33–52.

Caldwell, B 2012a. *Review of related literature for the evaluation of empowering local schools*, Department of Education, Employment and Workplace Relations, Canberra, <docs.education.gov.au/system/files/doc /other/review_of_related_literature_for_the_evaluation_of_empowering_local_schools.pdf>.

Caldwell, B and Hayward, D 1998. *The Future of Schools: Lessons from the Reform of Public Education*, Falmer Press, London and Washington DC.

Caldwell, B and Spinks, J 1998. *Self-managing Schools and Improved Learning Outcomes*, Report to the Department of Education, Employment, Training and Youth Affairs, Canberra.

Caldwell, B and Spinks, J 2013a. *Leading the Self-Transforming School*, Seminar Series 223, Centre for Strategic Education, Melbourne.

Caldwell, B and Spinks, J 2013b. *School Devolution and Accountability*, Submission to the Victorian Competition and Efficiency Commission from Education Transformations, Melbourne, <www.vcec.vic.gov.au/Inquiries/Completed-inquiries/School-autonomy/Submissions>.

Caldwell, B, Gurr, D, Hill, P and Rowe, K 1997. *The Schools of the Future Programme in Victoria, Australia: The Principal Perspective*, Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.

Carnoy, M and Rothstein R 2013. *What do International Tests Really Show about U.S. Student Performance?* Paper Economic Policy Institute, Washington DC, <www.epi.org/publication/us-student-performance-testing>.

Centre for Program Evaluation, University of Melbourne and Selby Consulting 2013. *Evaluation of the Independent Public Schools Initiative*, Final report, commissioned by The Department of Education Western Australia, <www.aitsl.edu.au/docs/default-source/default-document-library/evaluation-of-the-independent-public-schools-initiative-(full-report)-(1).pdf>.

Chubb, J and Moe, T 1990. Politics, *Markets and America's Schools*, The Brookings Institution, Washington, D.C.

Cobbold, T 2012. *Charter Schools are not Good Advertisement for School Autonomy*, Education Research Brief,

Save our Schools, <www.saveourschools.com.au/choice-and-competition/charter-schools-are-not-a-good-advertisement-for-school-autonomy>.

Commonwealth of Australia 2013. Public Governance, Performance and Accountability Bill 2013**,** Revised Explanatory Memorandum, <www.pmra.finance.gov.au/files/2013/10/PGPA-EM.pdf?v=1>.

Custers, T 2008. Selecting Effective Incentive Structures in Health Care: A Decision Framework to Support Health Care Purchasers in Finding the Right Incentives to Drive Performance *BMC Health Services Research*, 8:66, <www.biomedcentral.com/1472-6963/8/66>.

Department of Education 1998. *Assessing the Impact: The Final Report of the Co-operative Research Project, Leading Victoria's Schools of the Future*, Melbourne.

Department of Education and Communities (NSW) 2012. *Final Report of the Evaluation of the School-Based Management Pilot*, Student Administration and Program Evaluation Bureau. <www.det.nsw.edu.au/media/downloads/about-us/statistics-and-research/key-statistics-and-reports/sbm-evaluation.pdf>.

Department of Education and Early Childhood Development 2008. *Blueprint for Early Childhood Development and School Reform: An Overview,* Melbourne <http://www.chpcp.org/resources/Blueprint%20Education _overview[1].pdf>.

Department of Education and Early Childhood Development 2009. *Signposts: Research Points to How Victorian Government Schools have Improved Student Performance,* Paper 6, Education Policy and Research, Melbourne, <www.eduweb.vic.gov.au/edulibrary/public/publ/research/nws/signposts_report.pdf>

Department for Children, Schools & Families (DCSF) 2009. *The Impact of School Leadership on Pupil Outcomes*, Research Report DCSF-RR108, Nottingham, England <dera.ioe.ac.uk/11329/1/DCSF-RR108.pdf>.

Di Liberto, A, Schivardi, F, and Sulis, G 2013. *Management Practices and Students' performances,* Working Papers, LUISS Guido Carli, Rome Italy, <docenti.luiss.it/schivardi/policy-wor/working-papers/>.

Dinham, S 2014. *The Worst of Both Worlds: How the US and UK are Influencing Education in Australia,* 2014 Walter Neal Oration, Australian College of Educators, Western Australian Branch, Perth, October.

Dixon, M 2011. *Victoria as a Learning Community*, Extended Special Lecture, Melbourne Graduate School of Education, University of Melbourne, Department of Education and Early Childhood Development, November, Melbourne.

Dynarski, S, Hoxby, C, Loveless, T, Schneider, M. Whitehurst, G and Witte, J 2010. *Charter Schools: A Report on Rethinking the Federal Role in Education*, Brown Centre on Education Policy at Brookings, Washington DC, <www.brookings.edu/research/reports/2010/12/16-charter-schools>.

Education and Manpower Branch and Education Department 1991. *Department Handbook on Educational Policy in Hong Kong 1965-1998*. Government Printer, Hong Kong, <www.ied.edu.hk/cird/ publications/edpolicy/13.pdf>.

Elmore, R 2004. *School Reform from the Inside Out: Policy, Practice and Performance*. Harvard Education Press, Cambridge, MA.

Eurydice European Unit 2007. *School Autonomy in Europe: Policies and Measures*, Eurydice, European Commission, Brussels, <eacea.ec.europa.eu/Education/eurydice/documents/thematic_reports/090EN.pdf>.

Eyles, A, and Machin S, 2014. *The Introduction of Academy Schools to England's Education*, Center for Economic Performance, London School of Economics, CESifo Area Conference on Economics of Education, www.cesifo-group.de/dms/ifodoc/docs/...2014/.../ee14_Machin.pdf.

Gamage, D 2008. Three Decades of Implementation of School-Based Management in the Australian Capital Territory and Victoria in Australia, *International Journal of Educational Management*, 22(7): 664-675

Gobby, B 2013. Enacting the Independent Public Schools program in Western Australia, *Issues in Educational Research*, 23(1): 19.

Gove, M 2012. Transcript of speech on Academies, 11th January, <www.gov.uk/government/speeches/michael-gove-speech-on-academies>.

Hanushek, E 1996. Measuring investment in education, *The Journal of Economic Perspectives*, 10(4): 9-30.

Hanushek, E, Link, S and Woessman, L 2013. Does School Autonomy Make Sense Everywhere? Panel Estimates from PISA, *Journal of Development Economics,* 104(C): 212–232.

Hargreaves, D 2010. Creating *a Self-Improving School System*, National College for School Leadership, Nottingham.

Hattie, J 2009. *Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement*, Taylor and Francis.

Higham, R and Earley, P 2013. School Autonomy and Government Control: School Leaders' Views on a Changing Policy Landscape in England, *Educational Management Administration and Leadership*, 41(6): 701–717.

Honig, M and Rainey L 2012. Autonomy and School Improvement: What Do We Know and Where Do We Go From Here?' *Educational Policy*, 26(3): 465–95.

Hopkins, D 2013. *Exploding the Myths of School Reform*, Australian Council for Educational Research, Melbourne.

Hopkins, D, Munro, J, and Craig W 2011. *Powerful Learning: A Strategy for Systemic improvement,* ACER Press, Melbourne.

Hoxby, C and Murarka, S 2009. *Charter Schools in New York City: Who enrols and how they affect their students' achievement*, NBER Working Paper 14852, National Bureau of Economic Research, <www.nber.org/papers/w14852.pdf?new_window=1>.

Hutchings, M, Francis, B and De Vries, R 2014. *Chain Effects: The Impact of Academy Chains on Low Impact Children*, The Sutton Trust, London, <www.suttontrust.com/wp-content/uploads/2014/08/chain-effects-july-14-final-1.pdf>.

Jensen, B 2012. *Catching Up: Learning from the Best Systems in Asia,* Grattan Institute, Melbourne, <grattan.edu.au/report/catching-up-learning-from-the-best-school-systems-in-east-asia>.

Jensen, B 2013. *The Myth of Markets in School Education*, Grattan Institute, Melbourne, <grattan.edu.au/wp-content/uploads/2014/04/myth_of_markets_in_school_education.pdf>.

Jensen, B 2014. *Turning Around schools: It Can Be Done*, Grattan Institute, Melbourne, <grattan.edu.au/wp-content/uploads/2014/04/805-turning-around-schools.pdf>.

Jensen, B and Reichl, J 2011. *Better teacher Appraisal and feedback: Improving Performance,* Grattan Institute, Melbourne, <grattan.edu.au/wp-content/uploads/2014/04/081_report_teacher_appraisal.pdf>.

Kay, A 2010. What Happens after Big Reforms: Implementation Lessons from UK Health Care Policy, *Policy Briefs: Implementation Challenges*, Policy Brief No 9, Crawford School of Economics and Government, ANU, Canberra.

Leithwood, K, 2007. What We Know About Educational Leadership. In J Burger, C Webber, and P Kleinck (eds) *Intelligent Leadership: Constructs for Thinking Educational Leaders*, Springer, Dordrecht.

Leithwood, K. and Menzies, T 1998. A Review of Research Concerning the Implementation of Site-Based Management, *School Effectiveness and School Improvement*, 9(3): 233–285

Levin, B 2010, *How to Change 5000 Schools: A Practical and Positive Approach for Leading Change at Every Level,* Harvard Education Press

Machin S, Vernoit, J 2011. *Changing School Autonomy: Academy Schools and their Introduction to England's Education*, Centre for the Economics of Education, London School of Economics, London, <http://cee.lse.ac.uk/ceedps/ceedp123.pdf>.

Machin, S and Wilson, J 2008. Public and Private Schooling Initiatives in England: The Case of City Academies, in: Chakrabarti R, Peterson P (eds.) *School Choice International*. MIT Press, Cambridge MA, pp. 221–241.

Malen, B, Ogawa, R and Kranz, J 1990. Site-based management: Unfulfilled promises, *The School Administrator*, 47(2): 30–59.

Mannion, R, Goddard, M and Bate, A 2007. Aligning Incentives and Motivations in Health Care: the Case for Earned Autonomy, *Financial Accountability and Management*, 23(4): 401–420.

Mazano, R, Pickering, D and Pollock, J 2001. *Classroom Instruction that Works, Research Based Strategies for increasing Student Achievement,* ASCD, McREL.

Miron, G, Evergreen, G and Urschel, J 2008. *The Impact of School Choice Reforms on Student Achievement*, Education and the Public Interest Centre Boulder and Education Policy Research Unit, Tempe, <homepages.wmich.edu/~miron/publics/EPSL-0803-262-EPRU.pdf>.

Mourshed, M, Chijioke, C, and Barber, M 2010. *How the World's Most Improved School Systems Keep Getting Better,* McKinsey and Company, <mckinseyonsociety.com/downloads/reports/Education/Worlds_School_Systems_Final.pdf>.

Mulgan, G 2007. Innovation, Improvement and the Empowered User in Public Services'. In P. Diamond (ed) *Public Matters: The Renewal of the Public Realm*, Politico's Publishing, London, pp. 177–197.

National Agency for Education (NAE) 1997. *The Responsibility for Schools - a Challenge to Municipalities*, Skolverket, Stockholm.

National Audit Office 2007. *The Academies Programme,* www.nao.org.uk/report/the-academies-programme.

National Audit Office 2010. *Department for Education*: *The Academies Programme,* England, <www.nao.org.uk/publications/1011/academies.aspx>.

Nethercote, J 2003. *Australian Experience of Public Sector Reform*, Australian Public Service Commission, Occasional Papers, Australian Government, Canberra, <www.apsc.gov.au/publications-and-media/archive/publications-archive/history-of-reform>.

OECD 1994. *Effectiveness of Schooling and Education Resource Management: Synthesis of Country Studies*, Directorate of Education, Employment, Labour and Social Affairs, Education Committee, OECD, Paris.

OECD 2001. *Devolution and Globalisation: Implications for Local Decision-makers* 26 October, OECD Publishing, Paris .

OECD 2005. *School Factors Related to Quality and Equity Results from PISA 2000,* OECD Publishing, Paris,

<www.keepeek.com/Digital-Asset-Management/oecd/education/school-factors-related-to-quality-and-equity_9789264008199-en#page1>.

OECD 2010a. *PISA 2009 Results: What Makes a School Successful? Resources, Policies and Practices (Volume IV),* OECD Publishing, Paris, dx.doi/10.1787/9789264091559-en.

OECD 2010b, *Strong Performers and Successful Reformers in Education: Lessons from PISA for the United States*, OECD Publishing, Paris, www.oecd.org/pisa/pisaproducts/46581035.pdf.

OECD 2011. School Autonomy and Accountability: Are They Related to School Performance, *PISA in Focus 2011/9*, OECD Publishing, Paris, <www.oecd.org/pisa/pisaproducts/pisainfocus/pisa-in-focus-n34-(eng)-FINAL.pdf>.

OECD 2012. *Education Today 2013: the OECD Perspective,* OECD Publishing, Paris, dx.doi.org/10.1787/edu_today-2013-en.

OECD 2013. *PISA 2012 Results: What Makes Schools Successful? Resources, Policies and Practices (Volume IV),* PISA, OECD Publishing, Paris, dx.doi.org/10.1787/9789264201156-en.

OECD 2015..*Education Policy Outlook 2015: Making Reforms Happen,* OECD Publishing, Paris, dx.doi.org/10.1787/9789264225442-en.

Osborne, D and Gaebler, T 1993. *Reinventing Government: How the Entrepreneurial Spirit is Transforming the Public Sector*, Plume, New York.

Pont, B, Nusche, D and Moorman, H 2003. Improving school leadership, Volume 1, *Policy and Practice*, OECD Publishing, dx.doi.org/10.178/9789264044715-en.

PricewaterhouseCoopers (PWC) 2008. *Academies Evaluation: 5th Annual Report*, DCSF Publications, Annesley, England, <dera.ioe.ac.uk/8409/1/Academies5thAnnualReport.pdf%3Fversion%3D1>.

Pyne, C 2014. *Launch of the Australian Government's Independent Public Schools initiative,* Transcript, Ringwood Secondary College 3rd February, Melbourne, <www.pyneonline.com.au/media/transcripts/launch-of-the-australian-governments-independent-public-schools-initiative>.

Raymond, M 2009. *Multiple Choice: Charter School Performance in 16 States*, Centre for Research on Education Outcomes (CREDO) Report, <credo.stanford.edu/reports/MULTIPLE_CHOICE_CREDO.pdf>.

Reardon, S 2009. *Review of how New York City's Charter Schools Affect Achievement*, National Education Policy Centre, <nepc.colorado.edu/thinktank/review-how-new-york-city-charter>.

Sahlberg, P 2014. *Facts, True Facts and Research in Improving Education Systems*, Paper, British Education Research Association, London, May.

Sandals, L and Bryant, B 2014. *The Evolving Education System in England: a Temperature Check*, Research Report, Department for Education, England, <www.gov.uk/government/publications/the-evolving-education-system-in-england>.

Schutz, G, Woessmann, L and West, M 2007. *School Accountability, Autonomy Choice and Equity of Student Achievement: International Evidence from PISA 2003*. Education Working Paper No 14: Directorate of Education, OECD, <www.oecd-ilibrary.org/education/school-accountability-autonomy-choice-and-the-equity-of-student-achievement_246374511832>.

Summers, A and Johnson, A 1996. The Effects of School Based Management Plans, in Hanushek, E 1996. *Improving America's Schools: The Role of Incentives,* National Academy Press, Washington DC, <www.nap.edu/openbook.php?record_id=5143&page=75>.

Toma, E and Zimmer, R 2012. Two Decades of Charter Schools: Expectations, Reality and the Future, *Economics of Education Review,* 31(2): 209–212.

Townsend, T 1996. The Self-Managing School: Miracle or Myth, *Leading and Managing,* 2-3, pp. 174–194.

Trimmer, K 2013. *Independent Public Schools: A Move to Increased Autonomy and Devolution of Decision-Making in Western Australian Public Schools,* University of Southern Queensland eprint, <eprints.usq.edu.au/22841/3/Trimmer_CE_SV.pdf>.

Victorian Competition and Efficiency Commission 2013. *Making the Grade: Autonomy and Accountability in Victorian Schools, Inquiry into School Devolution and Accountability*, summary report, July, <www.vcec.vic.gov.au>.

Whitty, G, Power, S and Halpin, D 1998. *Devolution and Choice in Education: The School, the State and the Market*, Australian Education Review No. 41, ACER, <shop.acer.edu.au/acershop/product/A561BK/X;jsessionid=42B7DFDF56B307A2EAFCB957A005F62F>.

Woessmann, L, Luedemann, E, Schuetz, G and West, M 2008. *School Accountability, Autonomy, Choice, and the Level of Student Achievement: International evidence from PISA 2003,* OECD Education Working Papers, OECD Publishing, dx.doi.org/10.1787/246402531617.

World Bank 2007. *What is School-Based Management?* The World Bank, Washington DC, <siteresources.worldbank.org/EDUCATION/Resources/278200-1099079877269/547664-1099079934475/547667-1145313948551/what_is_SBM.pdf>.

Wylie, C 1999. *Ten Years On: How Schools View Educational Reform*. New Zealand Council for Educational Research, Wellington, <http://nzcer.org.nz/system/files/7483.pdf>.

Wylie, C 2007. *School Governance in New Zealand - How Is It Working?* New Zealand Council for Educational Research, Wellington, <http://nzcer.org.nz/system/files/15252.pdf>.

Wylie, C 2012. *Vital Connections: Why we need more than self-managing schools*, New Zealand Council for Educational Research, <http://nzcer.org.nz/nzcerpress/vital-connections>.

Wylie, C 2013. Improving Learning Opportunities: Why Schools Can't Do it on Their Own, *SET* No. 1, New Zealand Council for Educational Research, Wellington, <http://nzcer.org.nz/system/files/set2013_1_045.pdf>

Appendix 1: Glossary

School types

Academies Publicly funded independent schools in England which have greater freedoms, than other types of state schools, in areas such as operational settings, delivery of curriculum, and staff pay and conditions. They were an initiative of the Blair Government in 2001–2 to replace low performing secondary schools in areas of disadvantage and under the Cameron government since 2010, they now include primary schools. The change has been massive. More than half of England's secondary schools are academies and about 5 per cent of primary schools bring the number to more than 20 times the number in 2010.

Charter schools Independent public schools in the United States. They are publicly funded but operate free from many of the laws and regulations that govern traditional public schools. In exchange for that freedom, they are bound to the terms of a contract or 'charter' with the jurisdiction that lays out a school's mission, academic goals, and accountability procedures. The first state to pass a law for charter schools did so in 1991. By 2012 approximately 4.2 per cent of students were in charter schools. Some states have a cap on the number of charter schools they will allow and they tend to be new schools.

Free Schools, England The closer comparison to charters in England are free schools which are a recent addition to the education landscape and are also newly set up schools (often by set up by parent or community groups). They are outside of local education authority control and are run by parents, education charities or religious groups. The number of free schools that have been approved and are pending make up around 1 per cent of English schools.

Free Schools, Sweden Sweden introduced an autonomous category of public schools in 1991(all schools are public) and subsequently enabled greater elements of school choice and the establishment of free schools in any location. The schools are run by for-profit companies are outside of teacher industrial agreements and regulations for e.g. class sizes. About 20 per cent of students are in free schools.

Independent Public Schools, WA Launched in 2009, the Independent Public Schools initiative is empowers school communities by giving them greater capacity to shape the ethos, priorities and directions of their schools. Their independence covers xxx. There are now 441Independent Public Schools. That means about 70 per cent of students and teachers in Western Australia will be learning and teaching in Independent Public Schools.

Tomorrows Schools New Zealand's 1988 reform that removed 10 government education boards and enabled all schools to manage their own budgets, parents to have a greater role in school governance and elect their own board of trustees, emphasised parent choice among schools, and significantly restructured the education department to have less direct management and intervention but a strengthened review and accountability function and quality control of qualifications. Changes to the policy framework have continued but the fundamental direction has been sustained.

Tests and assessments

NAPLAN The National Assessment Program – Literacy and Numeracy is an annual written assessment for all students in Years 3, 5, 7 and 9 in all Australian education jurisdictions. It has been in operation since 2008. NAPLAN tests every year, the four areas (or 'domains') of: reading, writing, language conventions (spelling, grammar and punctuation) and numeracy.

PIRLS Progress in International Reading Literacy Study (PIRLS) has been conducted for the past 15 years and measures Year 4 students' reading ability and trends in home and school

contexts for learning to read. PIRLS assessment is conducted every five years in over 50 countries.

PISA Programme for International Student Assessment (PISA) is an international assessment of 15 year-old students in over 70 OECD countries. PISA assesses students' abilities to apply reading mathematical and scientific literacy to real life-challenges, rather than curriculum knowledge. It commenced in 2000 and is conducted every three years. The student tests are complemented by surveys of students, teachers and principals on the conditions for learning and the organisational context of schools.

Standardized tests A test that is administered and scored in a consistent or 'standard' manner. Standardized tests are designed in such a way that the questions, conditions for administering, scoring procedures, and interpretations are consistent and are administered and scored in a predetermined, standard manner.

Student achievement Level of academic achievement or performance as measured by standard metrics (grades, ratings, test scores) based on one or more forms of assessment such as class work, assignments, projects, tests and examinations.

TALIS The OECD Teaching and Learning International Survey is a survey of teachers and leaders predominantly in lower secondary schools. It commenced in 2008 and in 2013 covers more than 30 countries. The questions are structured on the concepts of effective learning and teaching conditions, and include questions on for example teacher characteristics, working environment and leadership.

TIMSS Trends in International Mathematics and Science Study measures trends in mathematics and science achievement at the fourth and eighth grades. It has been conducted on a 4-year cycle since 1995, making TIMSS 2011 the fifth assessment of mathematics and science achievement trends. TIMSS Advanced, measures trends in advanced mathematics and physics for students in their final year of secondary school, was conducted in 1995 and 2008, and is scheduled for 2015 (with the sixth assessment of TIMSS).

Appendix 2: Evidence matrix: Key sources

Study	Focus	Design	Major finding on autonomy
Within-country jurisdictional analyses			
Australia			
Department of Education, Victoria (1998), and Caldwell et al. (1997)	Longitudinal evaluation of Victoria's *Schools of the Future* – 1700 schools	5 year longitudinal study of principals' views in four domains (structured equation modelling): curriculum and learning; planning and resource allocation; personnel; and school and community.	Positive findings; strong principal endorsement of autonomy and its benefits; and identification of the strength of indirect impacts (e.g. though influencing planning and resource allocation) rather than a direct impact of autonomy on learning.
Department of Education and Communities, NSW 2012)	Evaluation of a school-based management pilot (recruitment, staffing and funding controls) in 47 NSW public schools that commenced in 2009.	Interviews with 40 principals; follow up intensive interviews in 15 schools; comparative analysis of themes.	Positive but preliminary; not able to quantify student achievement outcomes; strong endorsement by principals; they used the opportunity to recruit and build capability for increased self-management.
Centre for Program Evaluation, (2013)	An evaluation commissioned in 2011 of the WA initiative *Independent Public Schools* to give schools greater autonomy and reduce bureaucracy in government schools. The first pilots commenced in 2010.	An evaluation framework comprising: multiple sources of quantitative and qualitative data – surveys of principals, site visits, student achievement data, and stakeholder engagement.	Positive but preliminary; very strong principal endorsement; enhanced functioning of schools and opportunity for positive outcomes; negatives are increased workload and variation in preparedness for autonomy
Victorian Competition and Efficiency Commission (2013)	A public inquiry into benefits and relevance to Victoria of devolution and accountability in school systems.	Literature review; analysis of Government policies; organisational and performance data; consultations and submissions.	Positive but complex; increasing autonomy could support Victorian schools moving to global top tier. For the benefits of autonomy to be realised the school system needs better leadership skills, clearer governance and a 'middle layer' for system learning among autonomous schools.
New Zealand			
Wylie (1999)	Longitudinal evaluation of the impact of New Zealand's decentralisation policy *Tomorrow's Schools*.	Comparisons in six surveys over a ten year period of principals, trustees, parents and teachers; sixth survey of 109 dimensions in the management and operation of schools was of a new sample of 350 schools.	Positive but limitations; gains in management (e.g. planning) governance (e.g. greater parental representation) and professional capability (e.g. teacher satisfaction); limitations in mixed improvement in student achievement, and continued underperformance of Maori and children from low income families.
Wylie (2012)	A retrospective account from 1988 of new Zealand's longstanding school autonomy /decentralisation reforms .	Evaluative study structured on historical phases, drawing on New Zealand Council for Education Research independent reviews and other evaluative studies.	Mixed with unintended outcomes; longstanding high level of autonomy led to unproductive competition among schools and greater differentiation of enrolment; and reduction in system support.

Sweden

Blanchenay et al. (2014)	OECD case study of the impact of decentralisation and governance reforms in Sweden since early 1990s.	OECD country study methodology- interviews with stakeholders from municipalities, experts and reference to OECD PISA data.	Negative impact; lack of a systemic vision for change; municipalities found difficulties in adapting; performance dropped and the gap between high and low performers widened; local accountability and capacity needs to be built.

England

Academies Commission (2013)	A sponsored commission on the implications of complete academisation and how to secure improvement.	Seven month enquiry using public submissions, input by expert witnesses, and secondary data analysis.	Positive findings; endorsement of autonomy driven improvement; but not a guarantee of improvement; detailed implementation and new system collaboration needed.
National Audit Office (2007)	Review of the performance of academies compared to maintained schools.	Performance comparison between academies (converted in the 2002/3 to 2006/7 years) and schools with similar intake and performance to the academies (pre-conversion).	Positive but biased; significant improvement in pupil performance in academies compared to comparison group; but result seen as partly driven by higher socio-status of pupils attending academies.
National Audit Office (2010	Review of academies capacity to meet objectives in terms of costs, performance, contribution to tackling social disadvantage and management.	Quantitative analyses of performance, visits to 17 academies for in-depth interviews , surveys of neighbouring schools consultation with stakeholders and experts.	Positive with reservations; many early academies have shown significant and sustained improvement; two-thirds do not have sufficient data for assessment over time; more disadvantaged students benefit more than others .
National Audit Office (2014)	An audit of the oversight and intervention by the Department of Education in an increasingly autonomous school system.	Audit metholdology: stakeholder interviews, surveys of schools and local authorities; and analysis of performance data.	The department does not have adequate information about school level autonomy to determine or advise on effectiveness; it cannot assess the relative costs of different interventions.
PricewaterhouseCoopers (2008)	Independent 5 year longitudinal review for government of academies' contribution to educational standards.	A range of comparable data over 5 years for 27 academies; annual interviews, quantitative analysis of student data, annual surveys of students and teachers attitudes.	Positive but mixed results; overall progress in securing performance improvements; but wide diversity; no simple 'academy effect' ; significant need for system learning.

Within-country empirical analyses

Australia

Jensen (2013)	Examination of differences between schools responses to autonomy depending on whether they are in high autonomy or low autonomy environments.	Use of 2008 OECD data for the Teaching and Learning International Survey (TALIS) to examine differences that may exist between highly autonomous schools (non-government) and low autonomy government schools.	Mostly a neutral impact on management practices; few major differences in staff management, development and appraisal practices; some difference occurs in the scope for dismissal of staff in schools with greater autonomy.
Trimmer (2011,3)	Examination of WA principals' perceptions of the regulatory environment and capacity for risk taking in local decision-making.	Argument based on two studies of a stratified random sample of 235 schools that modelled factors effecting principals' attitudes to decision-making.	Principals vary in their capacity for reasoned local decision making; those with a compliance view of governance may not fully realise the benefits of autonomy.

England

Higham and Earley (2013)	Exploration of how school leaders in England view autonomy within a wider policy framework.	Survey of 2000 school leaders and triangulated case study data that identify and classify views on autonomy, accountability, external support and managing change.	Through autonomy, school leaders anticipate more control over management but not over the purposes of schooling; a significant variation is apparent between leaders' perceived capacity and their sense of freedom to act.
Hutchings et al. (2014)	Review of how well disadvantaged children achieve in sponsored secondary school academies in academy chains.	Reviewed student outcomes (e.g. in CGSE subjects, and English and mathematics) and classified the characteristics of schools and their performance in 31 academy chains.	Highly varied results; half exceed the mainstream average performance but against government indicators they are worse; perhaps due to administration and implementation challenges of being too large.
Machin and Wilson (2008)	Differences in pupil performance in academies compared to performance of matched group school.	A sample of four cohorts of 27 academies that opened between 2002/3 and 2005/6, using 1. a matching school (performance and intake) and 2. all other secondary schools in the locality as comparison groups.	Inconclusive; modest but statistically insignificant relative improvements; pupils most likely need a longer term exposure.
Eyles and Machin (2014)	Impact of conversion to academy status on pupil intake and performance.	National pupil level data used to compare academy and comparable non-academy students through a 'difference -in-differences event setting model.	Mixed results. Some generated significant improvement; impact largest where change is largest; two factors underpinning improvement in school leaving exams were head teacher change and curriculum change.

United States

Raymond (2009)	Evaluation of charter school performance in 16 states.	Longitudinal student level analyses of charter school impact for around 70 per cent of charter school students (2400 schools) by creating a virtual twin matched on demographics for 84 per cent of the students .	Mostly negative to mixed findings with a small 17 per cent enabling growth in achievement greater than would have occurred in mainstream; failure to gain in achievement may be more due to implementation failings than the core concept.
Hoxby and Murarka (2009)	Multi-year 2000-2008 evaluation of the impact of charter schools in New York City in student performance.	A study of performance on standardised tests for 93 per cent of students in charter schools in NYC compared with those who were failed in the ballot to enter a charter school and remained in conventional public schools.	Positive impact; in aggregate, charter schools achieved slightly higher results in some grades for reading and maths and this is cumulative over 8 years of schooling; length of time for study seems to be a positive factor; and individual schools vary widely.
Reardon (2009)	Analysis of the Hoxby and Murarka (2009) study of positive impact of charter schools in New York City.	Assessment of the analytical and statistical models used to determine the effects of being admitted to charter schools.	Negates other research of positive impacts; Hoxby and Muraka (2009) overstate the effect of charter schools due to: inadequate analysis of lottery data; the choice of statistical models; and faults in the computation of the cumulative effects of charters.

Cross country quantitative and qualitative analyses

Eurydice European Unit (2007)	A comparative analysis of the history and dimensions of autonomy in government schools in 30 European countries .	Comparative analysis is based on a questionnaire and formal validation of country perspectives.	Too complex to draw conclusions; very wide difference in reforms for autonomy; autonomy is now seen as educational improvement; accountability is only recently seen as a complementary to autonomy.
Hanushek et al. (2013)	Estimates the effect of autonomy on performance by examining the effects of within-country changes in key elements of school management.	Panel dataset spanning 2000-09 comprising over 1 million students in 42 countries; results tested for robustness in various contexts.	Different impacts; autonomy effects student achievement negatively in developing and low performing countries but positively in developed and high performing countries.
Mourshed et al. (2010)	Examines system improvement mechanisms using starting points and processes for sustained progression.	Examined 20 international school systems that have achieved significant, improvement; categorised their 575 interventions into 10 areas of impact; developed a single universal scale to categorise the systems on performance and their intervention patterns.	A small number of critical factors secure improvement; a correlation is apparent between a system's performance stage and the degree of central control – lower performance warrants central direction but higher performance is associated with increased school-based decision making and innovation.
OECD (2010a, 2011, 2012 and 2013)	Identification of the characteristics of high performing education systems and schools.	Correlational analysis of the two OECD composite autonomy indices (resource allocation and curriculum and assessment) with PISA data for successive years 2009-2012.	Positive for education systems but varies with associated features; autonomy for curriculum and assessment positively related but not for autonomy for managing resources; for schools within systems the impact of autonomy is positively related to accountability.
Schutz et al. (2007)	Identify the impact on equality of opportunity from policies for autonomy accountability and choice.	Microeconomic analyses based on 2003 PISAA data for 180,000 students in 27 countries.	Positive impact; counter to popular assumptions, autonomy, accountability and choice are 'tides that lift all boats' rather than harming disadvantaged students.
Woessmann et al. (2008)	Identify whether students perform better in systems that have institutional processes for school autonomy, accountability and choice.	Econometric modelling of PISA 2003 (265,000 students in 37 countries), taking into account a large set of students, family, school and country characteristics .	Positive impact; different facets of accountability, autonomy and choice are strongly related and positively associated; the maximum effect of these factors can be a gain equivalent to one and a half years of schooling .

Meta analyses

Betts and Tang (2011)	Examine the impact of charter schools on student achievement.	Meta-analysis of the impact of charter schools in 25 studies – analysis of the varying effect sizes from standardised mathematics and reading tests.	Highly varied outcomes, with many recording no difference either way; and many do not exercise autonomy to make changes; very small positive gains in elementary reading and middle school maths and reading.
Caldwell (2012a)	Research and policy analysis to advise Australian Government.	Analysis structured under 14 themes related to hypothesis that 'empowerment' of schools drives improvement.	Positive; decentralisation is a significant international reform theme; earlier focus was management; now it is leadership and capability for self-management.
Arcia et al. 2011	Study by World Bank of the impact of autonomy, assessment and accountability in Latin America and Europe, with the aim of developing benchmarking tools.	Analysis of 232 studies, 1000 observations and scrutiny of 29 programs.	Inconclusive; autonomy takes many forms; impact positive on dynamics of schools, involvement of parents, failure and dropout rates etc.; but inconclusive on student achievement in Latin America but positive in Europe; it takes up to 5 years to realise change.
Honig and Rainey (2012)	Examination of how schools in US jurisdictions implement the increased 'freedoms' that arise with greater autonomy (not charter schools) .	43 US empirical studies of outcomes in five systemic autonomy initiatives (not charter schools); improvement mostly evaluated through standardised tests.	Current reforms are gaining better outcomes than self-management in an earlier era; but limited as many autonomy provisions go unimplemented; and systems are not internally consistent or supportive.
Tomma and Zimmer (2012)	A collection of studies examining when and where differences are apparent between charter and public schools and the associated complex methodological issues.	A collection of papers reviewing the outcomes of studies of charter schools and examining the strengths and weaknesses of methodologies.	Mixed and complex results; all highlight the inconclusive findings; and that assessing impact is highly complex if not impossible methodologically – not adequate when charter schools continue to grow in popularity.