

Why systems thinking is important for the education sector



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Welcome to Education Development Trust

At Education Development Trust, we have been improving education around the world for 50 years. We design and implement improvement programmes for school systems, deliver expert careers and employability services, and deploy specialists to provide consultancy services internationally. Our work is informed by our continually refreshed body of research that focuses on the bright spots in education, from education authorities as diverse as those in Vietnam, Kenya, England, New York and Dubai.

Bringing about real change that alters the aspects of a national system that, for many reasons, is not working so well at the time, requires knowledge and the ability to design and implement changes to any of the levers that can impede great educational outcomes. So, the ability to affect policy, practices, pedagogy, behaviour, funding, attitudes and more is a prerequisite for a company that can truly claim to transform lives through improving education.

With highly informed agents of change operating in low- to high-income countries with their varying internal contexts, we not only design, but also show and enable – so when working with us, everyone involved, from policymakers to school leaders and teachers, is able to apply their new knowledge to drive sustainable system reform.

Our expert knowledge, programme design and implementation expertise are also deployed in delivering Ofsted-rated outstanding careers services in England, and in owning and managing a family of independent schools.

We are a not-for-profit and we are driven by our values of integrity, accountability, excellence and collaboration.

About the authors

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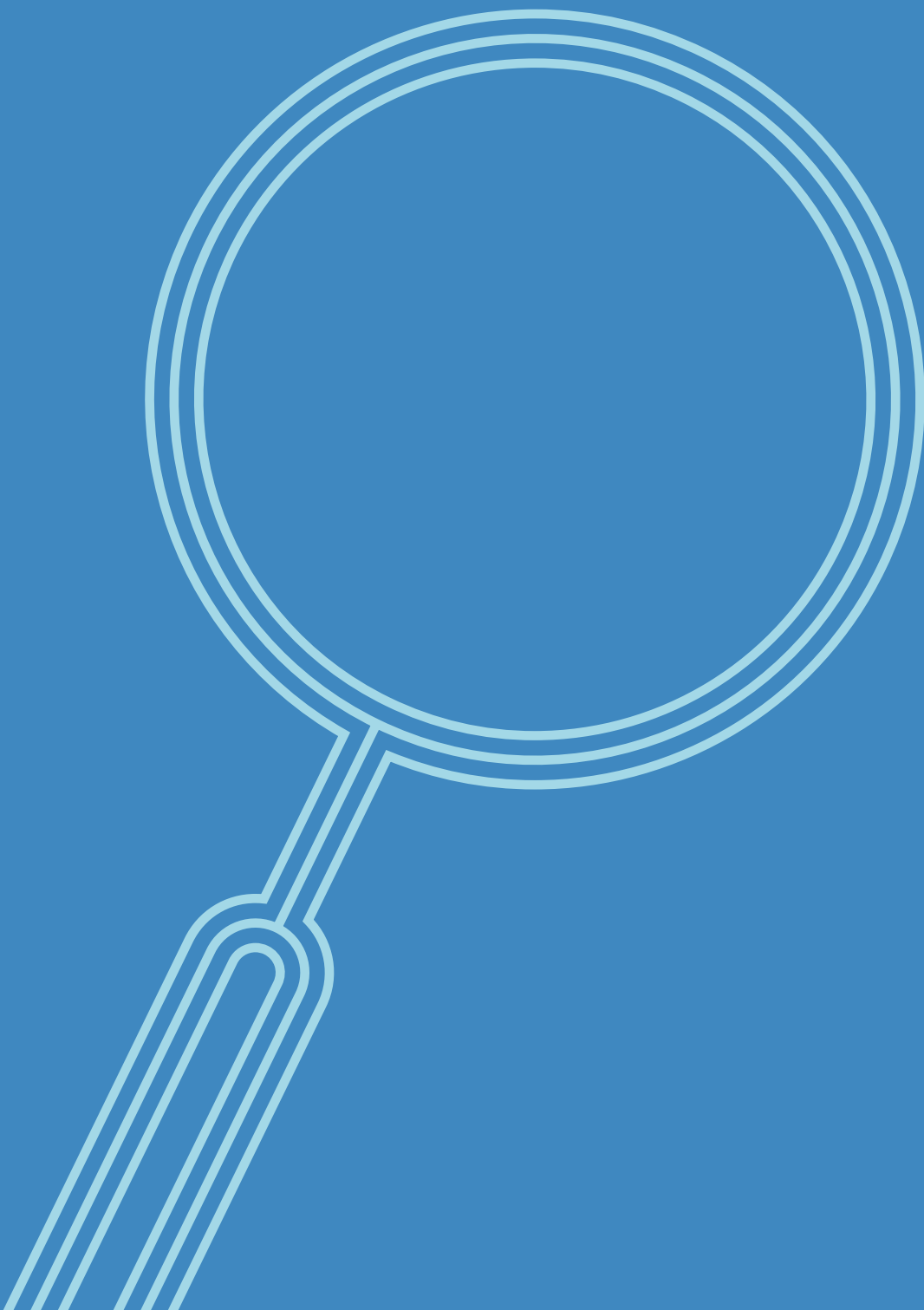
We would also like to recognise the contribution made by Alex Stutz, Sally Richards and Alex Beard from CFE Research. We have drawn some examples cited from a rapid review of evidence relating to *successful and sustainable education reform* that we commissioned from them in late 2018.



Acronyms and abbreviations

DFID	Department for International Development (UK)
DSIB	Dubai School Inspection Bureau
GPE	Global Partnership for Education
KHDA	Knowledge and Human Development Authority
LFA	Logical Framework Analysis
MoE	Ministry of Education
NLNS	National Literacy and Numeracy Strategy (England)
Norad	Norwegian Agency for Development Cooperation
OECD	Organisation for Economic Cooperation and Development
Ofsted	Office for Standards in Education, Children's Services and Skills (England)
OOSC	Out-of-school children
PISA	Programme for International Student Assessment
SDG	Sustainable Development Goal
SWAp	Sector-Wide Approach
UK	United Kingdom
UNICEF	United Nations Children's Fund
US	United States
WHO	World Health Organisation

Overview



Sarason's influential book – *The Predictable Failure of Education Reform*¹ – talks about the intractability of school systems and posits that complexity is the root cause of education reform failure. Sarason makes a compelling case.

This report focuses on systems thinking and its place in education transformation. It reflects on key published literature and on specific outputs from our own programme of research which has placed emphasis on system reform over the past five years. We hope it makes its own compelling contribution to writings on the topic.

Our work at Education Development Trust brings us into direct contact with education systems, and their governments. We are tasked with helping to solve intractable educational challenges. Our research and our work have a strong focus on reform, often at scale, and always in relation to one or more central elements of an education system (for example, leadership, teaching, learning). Systems thinking is a vital component part of what we do, how we understand the nature of the issues and how we support change.

Systems thinking has a past that tracks from computer engineering through urban planning, development and health. It has revolutionised the conceptualisation of problems and approaches to solutions in equal measure. It began as a means to address complex issues relating to supply chains. In broader strategic planning the notion of 'wicked problems' gained instant traction. Their explicit connection with intractability, complexity and system-wide breadth offered a useful discourse and helped the language 'catch on'. For development this paved the way for a move from more linear modes of analysing issues to more systemic approaches that allowed the relationships between organisations and the external environment to be factored in, and vice versa. Other fields such as healthcare, adopted systems thinking approaches to address some of the most stubborn issues affecting the populations they serve. This manifested as multifaceted and multidirectional policies and campaigns designed to tackle disease and change behaviours in the general population. Systems thinking in healthcare also resulted in contextually specific strategies for strengthening healthcare around the world. The application of systems thinking in policymaking discouraged linear cause and effect thinking and encouraged a more complex approach to understanding predictability and the relationship between actions and outcomes.

Systems thinking is a vital component part of what we do, how we understand the nature of the issues and how we support change

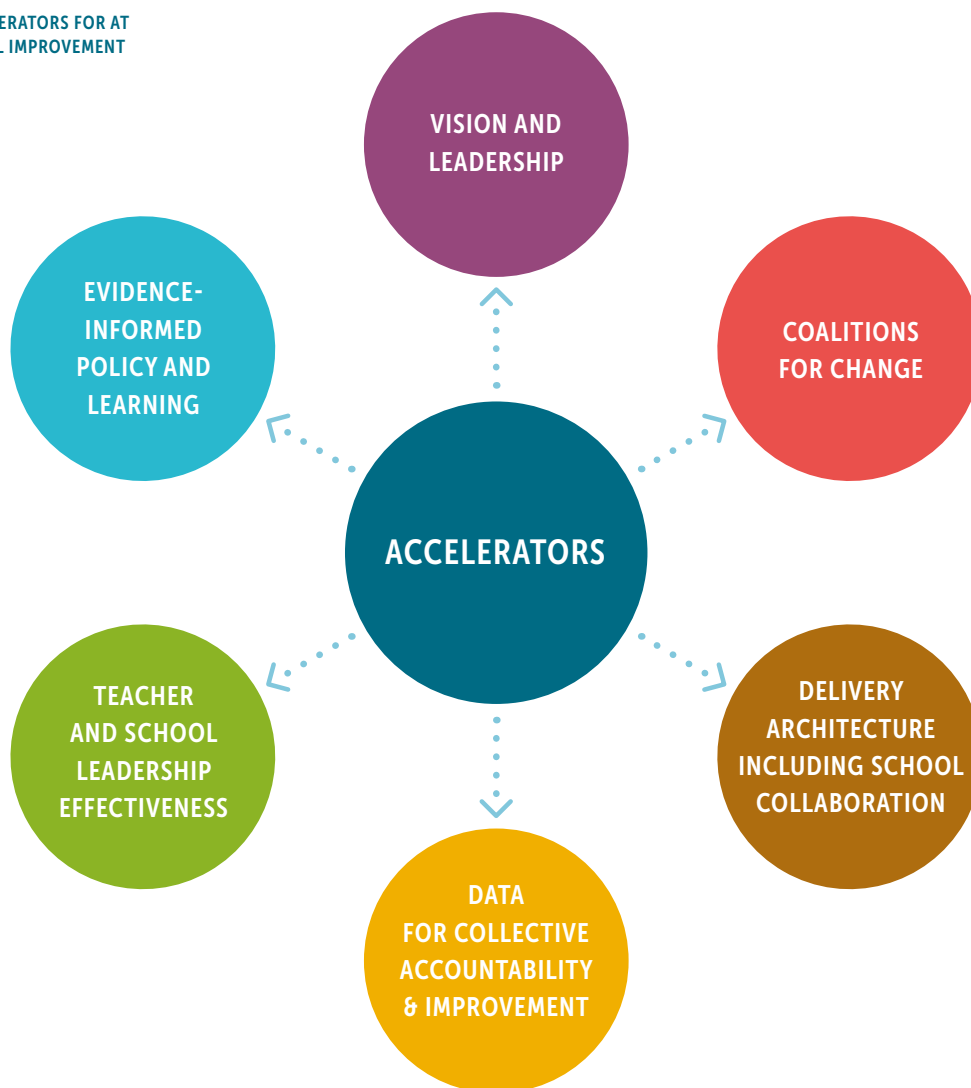
¹Sarason (1990)

In education, our field of interest, since the 1990s the discourse of systems thinking has increasingly permeated the fabric of donor and governmental thinking. In the late 1990s sector-wide approaches (SWAs) took hold to encourage the interaction of multiple stakeholders within and outside a system to work together for a common goal. It helped in part to tackle the great access crisis of the period. Systems thinking remains high on the agenda of the donors in relation to the current learning crisis too. The language and the discourse have infused the work of organisations such as World Bank, the Norwegian Agency for Development Cooperation (NORAD), the UK's Department for International Development (DFID) and UNICEF.

Interesting international examples of systems thinking linked to education reform have emerged from our own research as well as from the work of others. These examples highlight the ways in which systems thinking has inspired reform efforts and seems to be delivering results for learners. Our analysis of these examples leads us to identify six accelerators, summarised below, and a framework designed to support systems thinking for education reform at scale.

Interesting international examples of systems thinking linked to education reform have emerged from our own research as well as from the work of others

FIGURE 1: SIX ACCELERATORS FOR AT SCALE EDUCATIONAL IMPROVEMENT



Sadly, the examples we draw on also highlight the paucity of good evidence gathering run in tandem with reforms leaving us tentatively and retrospectively trying to piece together cause and effect.

Our framework places emphasis on and depicts the interplay between:

- vision and leadership
- coalitions for change
- delivery architecture including school collaboration
- data for collective accountability and improvement
- teacher and school leadership effectiveness
- evidence-informed policy and learning

This report concludes with a reflection on five policy tensions. These tensions are a collection of complex, intractable problems and considerations that must remain at the forefront of the minds of those leading and delivering global education reform efforts. These tensions suggest a need for us all to:

1. Keep a balanced focus on how to use systems thinking to address simultaneously the two 'wicked problems' of equitable access and quality learning.
2. To work across organisational boundaries in a joined-up way, reforming education systems to improve outcomes for all children whilst also considering the wider systemic influences so reform is not undermined.
3. Balance the desire to be evidence-informed with the reality that operating in a political, economic, social and cultural context will make this hard to do.
4. Pay equal attention to a) the change management programme and accompanying capacity development approach needed to implement a reform and b) designing the reform itself.
5. Carefully balance what the system can achieve with personal and collective responsibility for decisions that can (negatively or positively) impact the functioning of the system.

The scale of the challenge is significant. The SDGs have set out ambitious targets for education in 2030 looking at equitable access, quality teaching, relevant learning and ensuring children and young people are developing the skills, values and competencies needed to sustain them during adulthood and to provide a sustainable livelihood.

Traditional responses to improve education outcomes that take a piecemeal approach may have some success but are unlikely to solve the 'wicked problems' that different education systems around the world face. Systems thinking offers a glimpse of a different future. It can help policymakers achieve faster and more sustained progress in education that results in broad outcomes for the current and future generation of children and young people.

The scale of the challenge is significant. The SDGs have set out ambitious targets for education in 2030

Chapter 1

What is systems thinking?



A system is a set of components that work together as a whole to achieve a common objective. A system is greater than the sum of its constituent components because the relationship between the different components adds value to the system.

Systems thinking is an understanding of how the different components and stakeholders of a system interact and impact each other. Systems thinking goes further than mapping key stakeholders and institutions, and includes analysing formal and informal interrelationships, and how they influence the functioning of a system.

Systems thinking can be particularly powerful when:²

- an issue or problem is important
- an issue or problem is chronic and persists over time
- an issue or problem is familiar and has well-known features
- people have unsuccessfully tried to solve the issues or problem before.

Systems thinking is different to linear or cause and effect thinking, as it recognises more complex interdependencies and how multiple components may affect each other in different ways. It also helps to differentiate between the underlying issue and the symptoms of something deeper.

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TABLE 1: LINEAR AND SYSTEMS THINKING COMPARED

Traditional, linear thinking	Systems thinking
Looks at individual parts often in isolation	Looks at the whole of the system
Focuses on content	Focuses on process
Takes a cause and effect approach and sometimes attempts to fix symptoms rather than underlying problems	Seeks to understand potential causes and the dynamic factors that might be at play, including feedback loops
Tends to think 'technically' about a problem and think that a problem is easily solvable by a simple solution	Tends to think 'big picture' including factoring in incentives and the political economy when thinking about how hard it might be to solve this problem

²Goodman (2018)

As outlined in a handbook for Oxfam programme staff,³ systems thinking requires:

- iterative and adaptive planning based on learning and experimentation
- a focus on multi-stakeholder approaches and co-creation with local stakeholders
- the search for context-specific solutions rather than generic ones based on good practice elsewhere
- a recognition that pre-existing paradigms and pre-conceived ideas often limit our ability to understand local contexts
- a focus on fostering and use of complex resources
- increased work across organisational boundaries, reducing differences in power, bringing in different ideas and perspectives and resulting in a deeper, less biased understanding of the systems we engage in.

³Bowman et al. (2015:2)



Chapter 2

How has systems thinking evolved?



Systems thinking emerged in the 1950s. How it has grown and matured in its application in computer engineering, urban planning, development, health and policymaking is particularly interesting.

Computer engineering

Systems thinking has its origins in the mid-1950s when Professor Jay Forrester, a computer engineer who had started to research management, founded the field of 'systems dynamics' at the Massachusetts Institute of Technology Sloan School of Management. Professor Forrester developed 'systems dynamics' as an approach to the analysis of complex organisations and systems using computer simulations. He used this approach initially to analyse the supply chain at a General Electric appliance factory and to identify the cause of the factory's boom and bust cycle.⁴

Professor Forrester developed 'systems dynamics' as an approach to the analysis of complex organisations and systems using computer simulations

Urban planning and broader strategic planning

In 1973, Rittel and Webber, urban planners at the University of California, Berkeley, coined the term 'wicked problem' to describe an issue that was highly resistant to resolution, such as a complex policy problem for which people do not agree on causes or know clear solutions. The discourse of 'wicked problems' was then adopted in broader planning to characterise problems that:

- are difficult to clearly define
- have many interdependencies and multiple causes
- result in unforeseen consequences when attempting to address them
- are not stable
- have no clear solution
- are socially complex
- do not sit conveniently within the responsibility of any one organisation
- involve changing behaviour
- are intractable (for example, being subject to chronic policy failure).⁵

⁴Church (2016) ⁵Australia Public Service Commission (undated)

International development

Many development challenges have traditionally been examined using a linear perspective with their design and monitoring using logical framework analysis (LFA), drawing on the work of the US military related to analysis, planning and implementation in the 1960s. In more recent years, whilst LFA approaches are still common practice, there has been a recognition of the need for a more collaborative and systemic approach to tackling 'wicked problems', recognising their holistic and non-linear nature.

An example of such an approach appeared in 2003, when the UK's Department for International Development (DFID) published *Promoting Institutional and Organisational Development: A Source Book of Tools and Techniques*. This source book refers to the 'Open Systems Model' – a model based on a theory that organisations interact with their external environments rather than being closed and independent of external forces. The model allows a comprehensive analysis of the relationships between the organisation and its external environment and vice versa.

Health sector

There has been growing international consensus that despite the increased sophistication and improvement of most of the building blocks of the health sector, health outcomes have not been improving in equal measure. As a result, the health sector started to use systems thinking to address complex problems, such as tobacco control, obesity and tuberculosis. Lebcir⁶ outlines three examples of important health policy issues in which system dynamics modelling has been applied:

- disease transmission and public health risks assessment
- screening for disease
- managing waiting lists.

In 2007, the World Health Organisation (WHO) published a report outlining its Health System Framework and associated six building blocks⁷ which resulted in the health sector taking a much more systematic approach to health interventions.⁸ Since then, systems thinking has been used in the design of policies and support programmes for community health workers.⁹ WHO has also used systems thinking to develop a handbook *Strategizing national health in the 21st century*.¹⁰ This handbook highlights different strategies for strengthening health systems that that are appropriate and relevant to different countries, such as those with mature health systems, fragile countries with poor health systems and those that are somewhere in between.

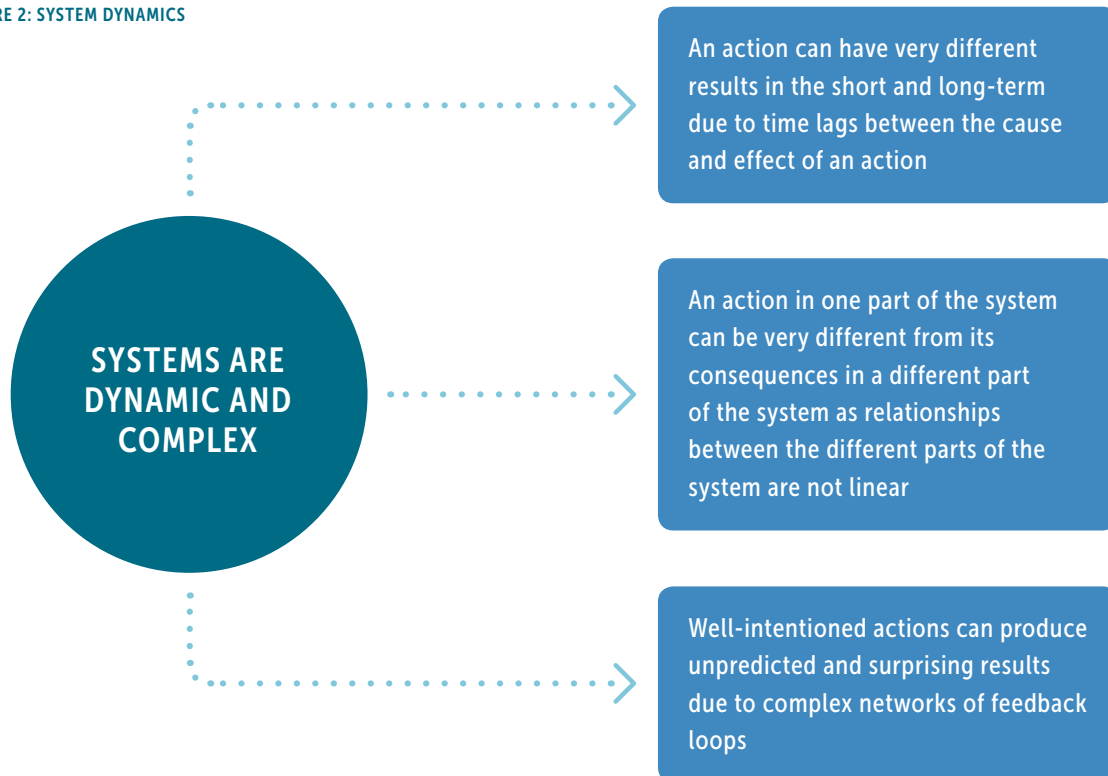
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⁶Lebcir (2006:18) ⁷The principal building blocks for the health sector include: (i) service delivery, (ii) health workforce, (iii) information, (iv) medical products, vaccines and technologies, (v) financing; and (vi) governance and leadership ⁸WHO (2007); De Savigny, D. and Taghreed, A. (Eds.) (2009) ⁹WHO (2018) ¹⁰Schmets, Rajan and Kadandale (2016)

The application of systems thinking to policymaking

The literature on systems thinking¹¹ argues that there are two important characteristics of systems – dynamism and complexity – that can result in unintended consequences or sub-optimal policy outcomes as outlined in the diagram below.

FIGURE 2: SYSTEM DYNAMICS



¹¹ See for example Lebcir (2006); Trochim et al. (2006)

Chapter 3

Why is systems thinking important for education?



In the 1990s, there was a growing realisation that many education reforms were not having the desired effect.¹²

One author argued that ‘schools change reforms as much as reforms change schools’¹³ making it very difficult to judge the true success or failure of a reform. Five reasons have been posited as to why education reforms in the twentieth century met with such little success:

- the piecemeal, or incremental approach
- failure to integrate solution ideas
- a discipline-by-discipline study of education
- a reductionist orientation
- staying within the boundaries of the existing system (not thinking out of the box).¹⁴

This highlights how education has often been viewed as a technical problem requiring a technical solution. However, when looking at education with systems thinking, there is an acknowledgement that the different components of the system interact including formal and informal institutions, processes, people, and social norms and behaviours, and this causes greater complexity that requires more than just a simple technical solution.¹⁵ Sarason’s influential book *The Predictable Failure of Educational Reform: Can We Change Course Before It’s Too Late?* pivots on the notion that the complexity of systems is at the heart of why reforms fail.¹⁶

Within developing countries, the concept of a sector-wide approach (SWAp) emerged in the late 1990s within key areas such as education, health and transport. The three main components or phases in a SWAp are:

1. An agreement between government and donors around the direction of the sector and aid effectiveness.
2. A framework for cooperation around a common agenda for education reform.
3. A structured operational programme led and managed by government and agreed by all parties.¹⁷

The basic rationale for a SWAp is to encourage a national government, in partnership with donors, non-governmental organisations, civil society and the private sector, to take a systems approach in developing a comprehensive, costed and nationally owned education sector strategic plan that supports the education policy.¹⁸ Whilst this was an important first step in thinking in a more systematic way about education, the late 1990s and early 2000s were still a period that was largely focused on achieving the Millennium Development Goal of Universal Primary Education, with the primary sub-sector in sharp focus. This resulted in

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¹² See for example, Psacharopoulos (1989); Sarason (1990); Fullan and Miles (1992) ¹³ Cuban (1998) ¹⁴ Banathy (1991) ¹⁵ Betts (1992) ¹⁶ Sarason (1990) ¹⁷ Ratcliffe and Macrae (1999) ¹⁸ Boak and Ndaruhutse (2011)

emphasis on increasing the primary net enrolment rate as the main strategic objective for many developing countries without sufficient attention being given to what effect this would have in the medium-term on demand for (and supply of) secondary education. In addition, a focus on access without giving enough attention to quality and improving learning outcomes has also been problematic. The resultant 'learning crisis' has been discussed at length including in seminal research from the Education Commission in their *Learning Generation* report¹⁹ and is the focus of the World Bank's 2018 World Development Report *Learning to Realize Education's Promise*.²⁰

A focus on access without giving enough attention to quality and improving learning outcomes has also been problematic

Key data and projections from the Education Commission's *Learning Generation* report²¹

'In low- and middle-income countries, only half of primary-school aged children and little more than a quarter of secondary-school aged children are learning basic primary- and secondary-level skills.'

'If current trends continue, by 2030 just four out of 10 children of school age in low- and middle-income countries will be on track to gain basic secondary-level skills. In low-income countries, only one out of 10 will be on track.'

The 'learning crisis' and systems thinking

Over the last decade, several factors have converged that have challenged education policymakers to think in a new way about education systems:

- the education Sustainable Development Goal's (SDG) focus on improving learning
- the Global Partnership for Education's (GPE) focus on supporting developing countries to develop fully costed sector plans that take a more holistic approach to *all* sectors
- the 2018 *World Development Report* and the Education Commission's *Learning Generation* report.

These have all helped put systems thinking further up the agenda for policymakers, demonstrating that the 'learning crisis' is clearly an important and chronic issue which cannot be solved using a linear approach.

*'A vision of a radically different school system is emerging – one that is managed more like an organisation [...].'*²²

¹⁹ Education Commission (2016) ²⁰ World Bank (2018) ²¹ Education Commission (2016:13) ²² Lannon (2018)

As a result, systems thinking has become increasingly central to bilateral and multilateral donors in their thinking about the education sector as highlighted in the box below.

- The World Bank's *Education Strategy 2020* takes an integrated approach to the education system²³ stating that 'success in education has to do with strengthening countries' education systems'²⁴
- The Norwegian Ministry of Foreign Affairs outlines in its *White Paper on Education and Development*, that a core part of its approach includes seeking to strengthen educational systems at country level²⁵
- The Education Commission's Report *The Learning Generation: Investing in education for a changing world* has systems thinking at its heart²⁶
- DFID's Education Policy *Get Children Learning* has as one of its six messages 'Back system reform which delivers results in the classroom'²⁷
- The World Bank's 2018 World Development Report *Learning to Realize Education's Promise* has a whole section dedicated to making the education system work for learning at scale²⁸
- UNICEF's *Strategic Plan 2018-2024* outlines the desire to 'support policy, capacity development and systems strengthening at both national and subnational levels...'²⁹
- The US Government's *Strategy on International Basic Education Fiscal Years 2019-2023* has as one of its four guiding principles, the need to strengthen the capacity and performance of education systems³⁰

²³ World Bank (2019) ²⁴ World Bank (2012:1) ²⁵ Norwegian Ministry of Foreign Affairs (2014:18) ²⁶ Education Commission (2016) ²⁷ DFID (2018:19) ²⁸ World Bank (2018) ²⁹ UNICEF (2018a:26)
³⁰ US Government (2018)

Chapter 4

Examples of at scale education system reform



It is helpful to distinguish between the key terms ‘at scale’, ‘system-wide’ and ‘systems thinking’. Although these phrases often appear together and can sometimes be used almost synonymously, they are different.

Important definitions and distinctions in relation to education reform

At scale: an intervention or set of interventions that are implemented in a large number of schools or districts or at national level.

An at scale intervention or set of interventions may have a variety of objectives and end goals. Examples of interventions and end goals could be:

- rolling out a new data collection system in order to monitor the academic progress of students
- introducing formula-funding with an equity focus so that schools in economically deprived areas receive higher levels of per capita funding
- providing training to improve the capacity of district education officials to undertake inspections
- introducing a new pedagogical approach in the classroom to improve learning outcomes.

System-wide: an intervention or set of interventions that are delivered through the system infrastructure.

Similar to an at scale intervention or set of interventions, system-wide interventions may have a variety of objectives and end goals.

Systems thinking: an approach which recognises the dynamic complexity of an education system and works with the end goal of improving learning outcomes at scale.

Much has been written about education reform, but often the analysis focuses on interventions in a particular area

Much has been written about education reform, but often the analysis focuses on interventions in a particular area such as financing, decentralisation, teacher supply, curriculum, teacher incentives, instructional materials or scripted lessons.³¹ These examples may be delivered as pilots or at scale and may be delivered through the system infrastructure. However, there are fewer examples in the literature of reforms that use systems thinking and have demonstrated measurable increases in learning outcomes in a large city, state or a country.

³¹ See for example McEwan (2015); Fleisch et al. (2016)

A set of key resources that fit in this category include:

- Michael Fullan’s research on large-scale education reform
- Andrew Hargreaves’ research including on Finland
- The McKinsey research on the world’s most improved school systems
- Tony McAleavy and Alex Elwick’s research on urban school reform in five cities
- Tony McAleavy, Thai Ha and Rachael Fitzpatrick’s research on Vietnam.

Other authors look at system reform from a more theoretical or framing perspective drawing on wider organisational change literature and psychology.³²

The following eight examples of education reforms were designed and implemented with systems thinking.³³

Alberta, Canada

This province in Canada does well in international assessments. It attracts good quality teachers to the profession and its success is built around two pillars – innovative capacity development and accountability. Through the Alberta Initiative for School Improvement fund, the province supplies funds to all its districts based on proposals developed by schools and districts. Separately, there is a database which tracks progress indicators and reports on performance. The innovative use of money and transparent data on progress have provided incentives for schools and districts to improve.³⁴

Dubai

Nearly 90% of children attend private fee-paying schools. Ten years ago, the country wanted to improve the standard of its education system but could not do this directly given that it did not own or manage these schools. The creation of two government agencies: the Knowledge and Human Development Authority (KHDA) and the Dubai School Inspection Bureau (DSIB) – helped to increase accountability for all schools and to drive school improvement. As a result, there have been rapid improvements over the last decade measured by an increase in the number and proportion of students in schools rated as Good or Outstanding in inspections. The focus of the Government of Dubai on accountability combined later with support and collaboration, has been key to the success.³⁵

The focus of the Government of Dubai on accountability combined later with support and collaboration, has been key to the success

³² See for example Adelman and Taylor (2007); Banathy (1991) ³³ These examples are drawn from a range of sources including a rapid review of the literature related to system reform, ongoing and completed research conducted by Education Development Trust. This is not an exhaustive list of examples ³⁴ Fullan (2009) ³⁵ McAleavy and Elwick (2017)

England

The late 1990s saw a significant education reform through the introduction of National Literacy and Numeracy Strategy (NLNS) that set out to improve learning outcomes for 11-year olds in all 20,000 primary schools across England. The strategy focused on six key elements: (i) ambitious standards, (ii) good data and clear targets, (iii) devolved responsibility, (iv) access to best practice and quality professional development; (v) accountability; and (vi) additional targeted support to low-improving schools. Following this reform the percentage of 11-year olds achieving high proficiency in literacy increased from 63% in 1997 to 75% in 2002, and the respective figures for numeracy moved from 62% to 73%.³⁶ The strategies continued well into the 2000s as did the positive trends in outcomes for pupils as well as reductions in the gap between all students and disadvantaged students.³⁷

Finland

In the early 2000s, Finland achieved top place in the Programme for International Student Assessment (PISA) test. The exact period of the reforms leading up to this success and the specific reasons for its success are disputed.³⁸ However, what is not disputed is that education reform took a systems approach with the vision of having a united school system that has distributed leaders with collective responsibility for the performance of their own school and for other schools in their districts. Teaching is a highly valued and respected profession strongly linked to the country's broader economic and social vision; and there is a broad culture of trust, engagement and cooperation in professional relationships. These factors helped to create an enabling environment for the reforms. At district level, there is a strong focus on strategic thinking and planning coupled with school self-evaluation. There is also a culture of, and commitment to, learning in schools and in society as a whole. Within schools, there is a focus on sustainable learning across a broad core curriculum and leadership for, by and as learning.³⁹

Education reform [in Finland] took a systems approach with the vision of having a united school system that has distributed leaders with collective responsibility for the performance of their own school and for other schools in their districts

London, England

Over the last decade, education in London has been transformed. In the early 2000s London was the country's worst performing region in national tests at age 16. By 2013 it had become the country's highest performing region. By this time, it also had the highest proportion of schools being judged to be Good or Outstanding by the national inspection body, The Office for Standards in Education, Children's Services and Skills (Ofsted). Core strategies for this improvement have included: collecting and using data to provide challenge and to target additional support for underperforming schools; introducing systemic change to the way schools work together to improve; practitioner-led professional development; and strong, effective leadership at school and local authority level. This was further supported by sustained political will over this period.⁴⁰ The improvement trajectory has been sustained since 2013 and London's secondary schools continue to deliver impressive results for all pupils.⁴¹

³⁶ Fullan (2009) ³⁷ The National Strategies (2011) ³⁸ See Hargreaves, Halász and Pont (2007); Oates (2015) ³⁹ Hargreaves, Halász and Pont (2007) ⁴⁰ McAleavy and Elwick (2017) ⁴¹ McAleavy, Elwick and Hall-Chen (2018)



New York City, US

The restructuring of the education system by Mayor Bloomberg over a 10-year period brought about clear educational improvement. Over this period, graduation rates in New York City increased from 50% to 75% and dropout rates decreased. Schools in the city, which served a more economically disadvantaged population than other districts in New York State, closed the attainment gap. By 2013, towards the end of the reform period, the city's performance on national tests were amongst the top in the country when compared with other urban school districts or cities serving similar populations.⁴²

Rio de Janeiro, Brazil

In 2008, a new mayor was elected in the city, who worked with his Secretary of Education, to drive education reform in the state. As a result, in the following five years, test scores increased; dropout rates decreased; and the state achieved the second highest literacy rate out of all states in Brazil. This all happened at the same time as growth in the school-age population. Key aspects of the reform included introducing a standardised curriculum; gradually removing double shifts in schools; increasing the supply of teachers; and a range of programmes to provide targeted support for underperforming schools and teachers. These interventions were coupled with sustained political will for the reform.⁴³

Vietnam

The beginnings of education reform in Vietnam can be dated back to independence from France in 1945. President Ho Chi Minh declared that everyone must be literate believing this was the only way for Vietnam to collectively overcome poverty and develop as a nation. To achieve this, he deployed 96,000 teachers throughout the country. From this point onwards, the country has embarked on an ambitious journey of improvement which resulted in Vietnam achieving the 8th best science results in the world in PISA in 2012 and again in 2015 despite being the poorest country of all participating jurisdictions. Students in Ho Chi Minh City outperformed the already strong national average for Vietnam.⁴⁴ Vietnam has adopted an adaptive and reflective approach to education improvement whereby long-term policy is tweaked and adapted linked to evidence from outside the system (for example, other countries and academic research), and within the system (for example, feedback on policy implementation from schools, districts and provinces). Evidence collected is then contextualised and applied, and the process of reflection and adaptation continues. Policy tweaks and adaptations have simultaneously focused on improving access to education for marginalised groups, improving teaching quality, exploring new approaches to pedagogy, feedback and assessment and improving infrastructure.⁴⁵

Vietnam has adopted an adaptive and reflective approach to education improvement whereby long-term policy is tweaked and adapted linked to evidence from outside the system

⁴² McAleavy and Elwick (2017) ⁴³ Ibid. ⁴⁴ Ibid. ⁴⁵ McAleavy, Ha and Fitzpatrick (2018)

Chapter 5

Six key accelerators for education system reform



Taking a deeper dive into these examples of education reform, as well as drawing on wider literature, we have drawn out six important system accelerators that we think are important for education system reform.

We see these accelerators as core capabilities that policymakers need to develop for rapid school improvement at scale, and which address common binding constraints in education systems:

1. Vision and leadership.
2. Coalitions for change.
3. Delivery architecture including school collaboration.
4. Data for collective accountability and improvement.
5. Teacher and school leadership effectiveness.
6. Evidence-informed policy and learning.

Some reforms are comprehensive and may use all six accelerators; others may be more focused and only use one or two.

Systems thinking acknowledges that systems are dynamic and complex. It requires leaders who have vision and understanding of how the different components of a system work together

*'Successful system reform usually means that a small number (up to half dozen) of powerful factors are interacting to produce substantial impact. It is the interaction effect that accounts for the results.'*⁴⁶

*'There is a danger that policy instruments are seen too much in a compartmentalised, atomised way by policymakers. It can be the judicious combination of reinforcing policies that leads to beneficial change.'*⁴⁷

Accelerator 1: Vision and leadership

Systems thinking acknowledges that systems are dynamic and complex. It requires leaders who have vision and understanding of how the different components of a system work together. These leaders need a broad range of skills including strategic thinking; adaptability and resilience in response to unforeseen outcomes; horizon scanning to see how the education system might be impacted by changes outside of it; and the ability to work across organisational boundaries and deal with ambiguity.

⁴⁶ Fullan (2009:108) ⁴⁷ McAleavy and Elwick (2017:16)

*What is needed is 'leadership that motivates people to take on the complexities and anxieties of difficult change.'*⁴⁸

*'Effective school leadership is increasingly viewed as central to large-scale education reform and to improved educational outcomes.'*⁴⁹

Vision and leadership have been written about extensively in the literature in relation to both school and organisational effectiveness.⁵⁰ Education research has suggested that leadership is the second most influential variable affecting learning outcomes after teaching.⁵¹ Evidence also suggests that successful systems develop the next generation of leaders to ensure continuity and sustainability of reforms.⁵²

The Director of Planning in the Ministry of Education, Science and Technology in **Rwanda** was a key player in owning and championing the country's education reforms in the late 1990s/early 2000s. He helped to build consensus at all levels of the education system for taking a sector-wide approach to education reform.⁵³ This created momentum behind the reform agenda and resulted in the rapid increase in the number of children accessing primary education. The current focus of the Ministry on improving literacy and numeracy builds on this legacy. In **Rio de Janeiro**, the joint leadership of the Mayor and the Secretary of Education over the state's education reforms was identified as being key to its success over the five-year period between 2008 and 2013.⁵⁴

Successful systems develop the next generation of leaders to ensure continuity and sustainability of reforms

'It's all about leadership, isn't it? So, whether it's leadership at local authority level, whether it's leadership at the Department [for Education] level, or whether it's leadership at the school level.' (Headteacher, London)⁵⁵

Effective leadership was at the heart of the **London school improvement story**. Stakeholders interviewed were very positive about the overall quality of leadership in schools a decade after the reform. England's school inspection agency, Ofsted, judged London's school leaders as being more effective than those in every other region of the country, with a far higher percentage of leaders judged 'outstanding'.⁵⁶ Effective leaders in some local authorities also helped support school improvement in schools in London.⁵⁷

In **Dubai**, strong, sustained and visible leadership from key senior individuals in the school system has produced an improvement in standards.⁵⁸ In **Vietnam's education improvement journey**, the government had clear vision and made education the top national priority supporting this with at least 20% of the public budget in recent years. This was supplemented by cash and in-kind contributions from parents and businesses in line with the country's socialisation policy.⁵⁹ An inspiring national vision was one of the four reasons for the success of **Finland's education system**.⁶⁰

⁴⁸ Fullan (2005:104) ⁴⁹ Hargreaves, Halász and Pont (2007:3) ⁵⁰ See for example: Adelman and Taylor (2007); Osmond-Johnson and Campbell (2018); Kotter (1995); Mourshed, Chijioke and Barber (2010) ⁵¹ Leithwood, et al. (2006) ⁵² See Mourshed, Chijioke and Barber (2010); Hargreaves, Halász and Pont (2007) ⁵³ Latham, Ndaruhutse and Smith (2006) ⁵⁴ McAleavy and Elwick (2017) ⁵⁵ Ibid.:47 ⁵⁶ Ibid. ⁵⁷ McAleavy, Elwick and Hall-Chen (2018) ⁵⁸ McAleavy and Elwick (2017) ⁵⁹ McAleavy, Ha and Fitzpatrick (2018) ⁶⁰ Hargreaves, Halász, and Pont (2007)

Accelerator 2: Coalitions for change

Systems thinking acknowledges that the capacity to solve complex problems is distributed across many stakeholders. Solutions and actions therefore rely on collaboration, and the negotiation of outcomes, rather than a technocratic approach. This highlights the need for change coalitions which are also at the heart of the leadership and political settlements literature.⁶¹ It has been posited that reforms that fail are those that do not invest sufficiently in strategies for 'creating readiness among a critical mass of stakeholders, especially principals and teachers.'⁶²

In **Ho-Chi-Minh City**, Vietnam, authorities created a strong coalition for change that included parents; as a result, teachers placed a high emphasis on the role of parents in helping to transform education for the next generation.⁶³ The role of parents in change coalitions can be seen across Vietnam, with parents inputting and influencing in three ways: (i) parents' financial and in-kind contributions to schools through the 'socialisation' policy; (ii) very high levels of parental involvement in education (41% in Vietnam compared to 5% average in OECD countries); and (iii) parent committees and boards which are responsible for checking activities in schools and are able to come to the school at any point in the day to observe or inspect what is taking place.⁶⁴

When **Dubai** introduced a new approach to school inspection in 2007, the Government also implemented a clear communication strategy to provide a broad range of different stakeholders (the business community, the media, private school owners, school teachers, school principals and parents) with the rationale for the reform and to secure their buy-in. This was highly successful, and transparency about school performance has now become part of the culture and expectation of stakeholders.⁶⁵

School-based decision-making has been an important factor in schools' improvement journeys as has having clear foundations for the organising and funding of schools

Accelerator 3: Delivery architecture including school collaboration

Systems thinking acknowledges the need for clear structures, roles and responsibilities to help create coherence within a system so that one part of a system is not inadvertently undermining what is happening elsewhere in the system.⁶⁶ This also enables effective communication between stakeholders (especially in contexts with highly decentralised systems where there is risk of diverging priorities between different levels). The broader literature highlights this as being a critical success factor for the sustainability of reforms. The reality for many systems is far from this ideal and any lack of clarity undermines coherence.

School-based decision-making has been an important factor in schools' improvement journeys as has having clear foundations for the organising and funding of schools.⁶⁷ Research has also shown the importance of the mediating 'middle tier' between the school and the Ministry of Education.⁶⁸ A study undertaken by the University of Toronto and the University of Minnesota between

⁶¹ See for example the Development Leadership Program's research, www.dlprog.org; Kotter (1995) ⁶² Adelman and Taylor (2007:63) ⁶³ McAleavy and Elwick (2017) ⁶⁴ McAleavy, Ha and Fitzpatrick (2018) ⁶⁵ McAleavy and Elwick (2017) ⁶⁶ Kraft, Blazar and Hogan (2017) ⁶⁷ Mourshed, Chijioko and Barber (2010) ⁶⁸ Leithwood (2013)

2004 and 2009 across nine states in the US, explored the effect of local district characteristics on student learning outcomes. It found that school networks which encouraged collaborative professional learning accounted for 17% of the variation in student learning outcomes across districts.⁶⁹

In Brazil, the last 20 years have seen significant decentralisation within the education system from the state to the municipal level. In our study about Interesting Cities it emerged that the **municipality of Rio de Janeiro** ran nearly all the basic education (grades 1 to 9) schools. This decentralisation was identified by *The Economist* as being significant as it allowed practices which worked to be shared across the whole city.⁷⁰ A similar approach can be found in **Vietnam**, where the education system is run in a very organised fashion that is both top-down and bottom-up: new ideas are tested out; feedback is given from schools to the middle tier and the national ministry; adjustments are made; and then the government through its decentralised educational structures at province and district level, implements at scale. This has been a factor that has contributed to the country's success in improving learning.⁷¹

In **England** under the NLNS, the government created regional teams and hundreds of teacher consultant positions to help implement the reform. Additional money was made available for professional development, resources and to collect and share data. These were fairly small changes compared to the size of the system but were a recognition that in order for the reform to be effective, an enhanced delivery architecture was needed.⁷²

In **Finland**, there is a strong educational leadership role played by over 400 local municipalities, who in the most part, own and finance schools and employ teachers and school leaders. They also play a key role in planning and developing the curriculum. **Tampere, one of the municipalities that was an early adopter of the education reforms**, drew from business to adopt a new management approach ensuring that schools, as customers, can access services that have cost and learning outcome indicators. A reform around school leadership gave five school leaders additional district-wide coordination responsibilities and compensated their schools with new managers to backfill these areas. This created the opportunity for greater distribution of leadership; better collaboration, knowledge-sharing and joint problem-solving between schools; and collective responsibility for improved learning in schools across the district rather than school leaders only focusing on their own schools.⁷³ This element of school-to-school collaboration was also at the heart of the **London** and **Rio de Janeiro** school improvement stories.⁷⁴

In Finland, there is a strong educational leadership role played by over 400 local municipalities, who in the most part, own and finance schools and employ teachers and school leaders

*'In the past few years, lateral capacity has been discovered as a powerful strategy for school improvement...There are a number of obvious benefits from lateral strategies...People learn best from peers (fellow travelers who are further down the road) if there is sufficient opportunity for ongoing, purposeful exchange; the system is designed to foster, develop and disseminate innovative practices that work...leadership is developed and mobilized in many quarters; motivation and ownership at the local level is deepened—a key ingredient for sustainability of effort and engagement.'*⁷⁵

⁶⁹ Lee, Louis and Anderson (2012) ⁷⁰ McAleavy and Elwick (2017:91) ⁷¹ Ibid. ⁷² Mourshed, Chijioke and Barber (2010) ⁷³ Hargreaves, Halász and Pont (2007) ⁷⁴ McAleavy and Elwick (2017) ⁷⁵ Fullan (2006:116-117)

Similarly, when **Ontario** was implementing an education reform to improve literacy and numeracy in primary schools, 100 people in the Ministry of Education worked in partnership with school leaders in all 72 school districts who in turn created reform implementation teams in each of their schools. The total investment for this delivery infrastructure came to about 1% of the annual budget for primary and secondary education, so a relatively small investment for a significant reform.⁷⁶

Accelerator 4: Data for collective accountability and improvement

Systems thinking acknowledges that 'collective capacity' is more important than individual knowledge. It also acknowledges the importance of feedback and learning loops, based on data, in order to build a culture of continuous improvement.

Research undertaken by McKinsey found that two out of the six common features of 20 school systems on an improvement journey were 'assessing student learning' and 'utilising student data to guide delivery'.⁷⁷ Research from **Ontario** on professional learning⁷⁸ outlines the need for ongoing improvement and use of evidence to identify and share good practice, whilst some of the school improvement research highlights the need for collecting and using data on intermediate outcomes to allow for formative evaluation of processes as well as to measure progress.⁷⁹

The use of education performance data was one of the common factors in the success of **London schools**. This data was used for a two-fold purpose: to identify which schools were underperforming and then to target support to these schools. Stakeholder interviews confirmed that a focus on data was a driving force behind several of the key education improvement initiatives during the 2000s such as London Challenge and Teach First, as well as being central to the day-to-day operations of local authorities and academies. Accountability was initially only through Ofsted inspections and national tests for all 11- and 16-year olds, the results of which were made public. The Director of the London Challenge programme, Tim Brighouse, believed that more support was needed for schools, especially those that were struggling, and he ensured teachers in those schools received higher levels of coaching and training.⁸⁰ In **England**, data is used as a key feature of accountability and helped policymakers to track progress of schools and individual pupils during the NLNS. Since 1992, annual performance tables have been published by the government showing the aggregated test results by school for all 11-year-olds and 16-year-olds in the country. The publication of these performance tables is closely associated with the publication of school inspection data and inspection reports from Ofsted giving parents and communities transparency on how schools are performing.⁸¹

In **Brazil**, every two years all students in Grades 5 and 9 sit national tests in mathematics and Portuguese (the 'Prova Brasil') and the results are made available at national, region and school level. The collection of this data enables comparison between schools and across schools and regions over time. This has given

Systems thinking acknowledges that 'collective capacity' is more important than individual knowledge

⁷⁶ Ibid. ⁷⁷ Mourshed, Chijioke and Barber (2010) ⁷⁸ Osmond-Johnson and Campbell (2018) ⁷⁹ Adelman and Taylor (2007) ⁸⁰ McAleavy and Elwick (2017) ⁸¹ Kaliszewski, Fieldsend and McAleavy (2017)

Whilst the focus on performance data has not been popular with everyone, it has undoubtedly been a factor that has driven improvement in schools.

credibility to the data as it is seen as being fair and comparable by educators. Whilst the focus on performance data has not been popular with everyone, it has undoubtedly been a factor that has driven improvement in schools.⁸² Data is collected on **Vietnamese teachers** through a variety of means including self-review, peer-review, subject-level review, headteacher review, and reviews by education officials and other schools. Where there are discrepancies in scores, a headteacher will observe teachers to determine the reason for the differences. The use of this data to monitor teachers has helped to drive improvements in performance.⁸³

There is disagreement about the extent to which **Finland** uses test-based accountability; however, what is clear is that the country uses data to monitor performance and target support.⁸⁴ Finland has a strong focus on school self-evaluation and networking so that the system can 'build cooperative structures and hear the weak signals'.⁸⁵ The National Board of Education plays the external evaluation role and collects data on quality at school and municipality level.⁸⁶ Where issues are identified, the municipality can provide support, training and advice in a cooperative and collaborative rather than a punitive way. As a result, underperformance is 'rectified through participation and interaction rather than public exposure and intervention'.⁸⁷ In **Alberta**, transparent data on progress coupled with an innovative school improvement fund that funds school and district-led proposals, has created soft accountability for improvement.⁸⁸

Accelerator 5: Teacher and school leadership effectiveness

Systems thinking acknowledges the importance of 'collective capacity' as well as top-down directives. Building the capacity of the education workforce, so that they own change and have the skills to sustain improvement is critical. Building the technical skills of teachers and principals was one of six common features of 20 school systems on an improvement journey. Three main approaches used to build skills included: (i) pre-service training; (ii) in-service training; and (iii) peer-led learning. The emphasis was on instructionally focused leaders.⁸⁹ A high-quality teaching profession was one of the four principal reasons behind **Finland's education success** with teaching being the most desired profession for secondary school leavers and only one in ten applicants to teaching obtaining a place to train.⁹⁰

Over the last twenty years, **Vietnam** has systematically improved pre-service training for teachers in government schools, increasing the qualification level and also providing a catch-up programme over the summer holidays for existing teachers. As a result, many more teachers are qualified at graduate and post-graduate level and the teacher profession has become more professionalised.⁹¹ Vietnam also invests in future principals and vice-principals providing training in school leadership through two dedicated national institutes.⁹²

In the early 2000s, schools in **London** were facing teacher vacancy rates that were more than three times higher than those in the rest of the country. One of the key reforms that sought to address this challenge was the creation of Teach

⁸² McAleavy and Elwick (2017) ⁸³ McAleavy, Ha and Fitzpatrick (2018) ⁸⁴ See Hargreaves, Halász and Pont (2007); Oates (2015) ⁸⁵ Hargreaves, Halász and Pont (2007:20) ⁸⁶ Oates (2015). ⁸⁷ Hargreaves, Halász and Pont (2007:20) ⁸⁸ Fullan (2009) ⁸⁹ Mourshed, Chijioke and Barber (2010) ⁹⁰ Hargreaves (2009) ⁹¹ McAleavy, Ha and Fitzpatrick (2018) ⁹² McAleavy and Elwick (2017)

First which provided a new route into teaching for high-achieving graduates from UK universities. Recruits onto the programme had to commit to teach for two years in some of the most economically disadvantaged government schools in London. Teach First produced its first cohort of new teachers in 2003 and made a significant contribution to improving the perception of teaching in London as a high-status profession for the country's top graduates. Its focus on some of the most disadvantaged schools also injected new momentum and energy in these schools.⁹³

Teach First produced its first cohort of new teachers in 2003 and made a significant contribution to improving the perception of teaching in London as a high-status profession for the country's top graduates

Accelerator 6: Evidence-informed policy and learning

An evidence-informed approach is vital. Systems thinking acknowledges that there is no linear relationship between inputs and outcomes. Therefore, it is important to start with an evidence base of what is known to work but then build in adaptability and learning cycles to any education reform approach, recognising that there are still a lot of unknowns about what works.

Some influential and important publications and resources exist as a result of the need for this type of evidence. For example, Hattie's *Visible Learning* provides a synthesis of over 800 meta-analyses on pedagogical interventions that result in improved student achievement to differentiate between common sense ideas and evidence-informed practice.⁹⁴ Another example comes from DFID, the Bill & Melinda Gates Foundation and the Hewlett Foundation who provided funding for a systematic review on the strength of evidence of a range of interventions for improving learning outcomes in low- and middle-income countries to help policymakers and practitioners become more evidence-informed.⁹⁵

The need for clear policy and legislation as well as curricular and standards are also accepted. A well-known report from McKinsey found: 'Establishing policy documents and education laws' and 'revising curriculum and standards' were two of six common features of 20 school systems on an improvement journey.⁹⁶ In **Finland**, the National Board of Education which includes the National Curriculum Council, looks to learn from the past (nationally and globally) and uses this to invest heavily into the future. It has developed guidelines to help strategic thinking and this is supported by the use of educational research to ensure education policies are developed in an evidence-informed way. Whilst the Board and Council set the strategic direction, they trust teams of highly qualified teachers to write the curriculum collaboratively at municipality level, to ensure that it will meet the needs of their students.⁹⁷

In recent years, **Vietnam** has created teaching standards based on an analysis of international literature and policy relating to the characteristics of high-quality teaching drawing on evidence from Australia, the UK and the US but also including specific metrics aligned to the Vietnamese education system. The Vietnamese system is outward looking but also strongly focused on contextualising policies to ensure they have a good cultural fit.⁹⁸ In **Ontario**, an education research and evaluation strategy was developed which created dialogue between researchers and schools on how to maximise the benefits of research evidence. As a result,

⁹³Ibid. ⁹⁴Hattie (2009) ⁹⁵Sniltveit et al. (2015) ⁹⁶Mourshed, Chijioke and Barber (2010) ⁹⁷Hargreaves, Halász and Pont (2007) ⁹⁸McAlevy, Ha and Fitzpatrick (2018)

research informed innovations in policy and practice. These innovations went through a cycle of evaluation and learning which then resulted in modifications to further improve results.⁹⁹

Evidence shows that variation in teacher effectiveness is the factor that has the strongest impact on pupil outcomes after a pupil's socio-economic background.¹⁰⁰ This indicates that attracting and retaining the most effective teachers is one of the best ways to improve learning outcomes in an education system. This evidence has informed education reform strategy in **Finland, London and Vietnam** (see Accelerator 6).¹⁰¹ In **Rio de Janeiro**, as part of the education reform, the Secretary of Education gradually implemented a transition away from double- or triple-shift schools to single-shift schools to increase instructional time. This strategy was influenced by the global evidence that indicates that increased instructional time is a key factor leading to better learning outcomes.¹⁰²

Variation in teacher effectiveness is the factor that has the strongest impact on pupil outcomes after a pupil's socio-economic background

A framework for education system reform

Systems thinking requires a holistic perspective and the incorporation of the six accelerators into a framework that can be used to design and implement education reform at scale. At the heart of any system reform framework has to be the goal of improving outcomes for all learners – an inclusive and broad vision that goes beyond what can be measured by test scores. Successful system reform can also only take place if there is a supportive enabling environment. This includes:

- government, community and household financing of education
- parental/community engagement and levels of literacy
- school readiness from early childhood development opportunities
- employment prospects for children and young people leaving school.

The diagram on the following page provides a visualisation of a potential education system reform framework that uses systems thinking.

⁹⁹ Campbell and Fulford (2009) ¹⁰⁰ OECD (2006) ¹⁰¹ Hargreaves, Halász and Pont (2007); McAleavy and Elwick (2017) ¹⁰² McAleavy and Elwick (2017)

POLITICAL, SOCIAL,
ECONOMIC AND
CULTURAL CONTEXT



CAREER PATHWAYS AND
EMPLOYABILITY, SOCIAL /
ECONOMIC RETURNS

Chapter 6

Policy tensions



This report provides an overview of the evolution of systems thinking and the important place of systems thinking in education reform. Its relevance for policymakers and practitioners as they tackle the ‘learning crisis’ is strong.

Drawing on the evidence, we have identified six important accelerators and offer a framework to support systems thinking for education reform at scale.

Frameworks are a good starting place, and different organisations and systems use a diverse range of frameworks to guide their work. For policymakers and practitioners, the challenge with any framework is its implementation and the wider set of tensions that a framework alone cannot fully address. Outlined here are five of those tensions.

Tension 1: The need to fix the learning crisis whilst not forgetting about those who are not able to access education

Whilst there is clearly a learning crisis, in some regions and countries there is still a grave access challenge. Who you are, where you live and what assets you have (or do not have) all contribute and intersect, resulting in some children being denied access to education. There were 62 million out-of-school children (OOSC) of primary school age in 2015¹⁰³ with between 35% and 50% them living countries affected by conflict, fragility and disaster.¹⁰⁴ By contrast, 387 million children of primary-school age (including these 62 million OOSC) are not learning the minimum levels in reading and mathematics and as a result, 56% of all children will not achieve minimum proficiency levels by the time they should be completing primary education.¹⁰⁵

Addressing the access problem is multi-faceted and requires a response beyond that of just providing more schools and better teachers; there is also a need to address demand-side barriers to children accessing school regularly such as poverty, hardship and fear of sexual harassment as well as wider issues of conflict prevention and resolution, and refugee access to employment opportunities in host countries. Indeed, tackling the challenge of children’s access to education in protracted crises is a ‘wicked problem’ that cannot simply be fixed by looking at the education system alone. It requires working in a multi-disciplinary way.

For policymakers and practitioners, this means the need to keep a balanced focus on how to use systems thinking to address simultaneously the two ‘wicked problems’ of equitable access and quality learning.

For policymakers and practitioners, the challenge with any framework is its implementation and the wider set of tensions that a framework alone cannot fully address

¹⁰³ World Bank (2015) ¹⁰⁴ UNESCO-UIS (2016); UNICEF (2018b) ¹⁰⁵ Education Commission (2016)

Tension 2: Looking at education as a system whilst at the same time recognising that education is part of a bigger system with interdependencies

Education is an open system that interacts with and is affected (both positively and negatively) by intended and unintended consequences of reforms within the wider system(s) of which it is part. As a result, education policymakers need to ensure they do not look at education reform with a focus only on the education system. Instead, they need to take a holistic perspective that looks simultaneously inside and outside the education system. This requires understanding the interdependencies with wider public policy and reform related to areas such as early childhood development, social welfare, employment and the needs of the labour market, as well as broader issues such as taxation and public financial management. For example, the overall size of the public budget coupled with the percentage and gross amounts available to spend on education constitute a key influence. Ensuring that money is then spent effectively is also of great importance.

This underlines the need for policymakers to work across organisational boundaries in a joined-up way. Australia has attempted to do this in taking a 'whole of government approach' which the government believes increases the level of ownership across a large group of stakeholders and is therefore more likely to result in behaviour change.¹⁰⁶

For policymakers and practitioners, this means keeping a balanced focus on reforming the education system so that it achieves improved outcomes for all children, whilst at the same time having a broad understanding of the bigger system(s) in which the education system operates, to ensure that education reform is not undermined by the reforms taking place in the bigger system(s).

Education policymakers need to ensure they do not look at education reform with a focus only on the education system

Tension 3: The desire to be evidence-informed yet the reality of operating in a political, economic, social and cultural context that at times has conflicting priorities

*'One of the most difficult challenges is how to make better use of sound research within controversial or conflictual policy areas, which are characterised by highly publicised value differences...rational and reasonable deliberative processes can become sidetracked by media-driven controversy. To the extent that research findings are widely used as ammunition within strongly emotive debates, it may be only a short step to accusations that research on these matters is inherently biased and lacks objectivity...partisans are likely to 'cherry-pick' evidence that seems to support their existing positions.'*¹⁰⁷

¹⁰⁶ Australia Public Service Commission (undated) ¹⁰⁷ Head (2015:475)

Any reform takes place in a dynamic local context so whilst it should be informed by the best available international and local evidence, it also needs to be rooted in the political, economic, social and cultural reality in which it is being implemented. This requires ensuring that evidence on what works is widely known and shared amongst key stakeholders along with any limitations of this evidence.

For policymakers and practitioners, this means creating a culture of learning from the evidence whilst at the same time attempting to understand the opportunities and barriers to sustainable reform which might at times conflict with what the evidence says is the most effective way to approach reform.

There is also an evidence creation element that remains important. Many of the examples cited in this report were not well researched and/or piloted in tandem with the reform, leaving researchers tentatively and retrospectively piecing together cause and effect where possible. The reality is that unless we do better at evaluating the impact of reforms, we will fail to create a better bank of evidence that can support evidence-informed policy.

Tension 4: The theory of education system reform versus the reality of the capacity of the system to implement that reform

*'Effective large-scale change requires careful attention to implementation as well as policy, and to the building of an implementation system that is up to the task of bringing about the necessary changes in daily practice.'*¹⁰⁸

The theory, evidence and frameworks may point to particular areas of priority for education reform, but they do not always provide a detailed implementation plan outlining the staffing structure, roles and responsibilities of different stakeholders that will work to make that reform happen in different contexts. When education reform is implemented, it needs a whole change management programme with a focus on capacity development to make it happen. It is not change for change's sake, but rather change that results in sustained improved learning outcomes for all.

For policymakers and practitioners, this means placing equal attention on the change management programme and accompanying capacity development approach needed to implement a reform as on designing the reform.

When education reform is implemented, it needs a whole change management programme with a focus on capacity development to make it happen

¹⁰⁸ Ibid:9



Tension 5: The need to balance the focus on the system with a wider understanding of personal agency and community responsibility for education

It is easy to blame 'the system' when reforms fail. Whilst the system is complex and at times unpredictable, this is not a reason to blame the system for negative beliefs, ineffective leadership and poor decision-making by individuals who are part of the system. Individuals and communities play a key role in shaping the circumstances that define their lives and in engaging (or disengaging) with education reform and this can be both positive and negative. As McGarvey (2018) argues:

*'So many of the problems we face, that we often attribute to 'the system' are, to some extent, self-generated. Therefore, many of these problems (though certainly not all) are within our individual and collective competence to positively affect. Considering this, and in the absence of a bloodless revolt any time soon, the question for people... is no longer simply "how do we radically transform the system", but also, "how do we radically transform ourselves?"'*¹⁰⁹

For policymakers and practitioners, in order to ensure sustainability of any systemic reform, this means carefully balancing what the system can achieve with personal and collective responsibility for decisions made that can (negatively or positively) impact the functioning of the system.

¹⁰⁹ McGarvey (2018:113)

Chapter 7

Conclusion



The SDGs have set out ambitious targets for education in 2030 looking at equitable access, quality teaching, relevant learning and ensuring children and young people are developing the skills, values and competencies needed to sustain them during adulthood and provide a sustainable livelihood.

GPE outlines how education is critical to achieving the other SDGs, specifically emphasising the evidence which demonstrates:¹¹⁰

- education reduces poverty and increases income
- education prevents inequality and injustice
- education leads to better health
- education drives sustainable growth
- education helps us to protect the planet
- education requires partnership.

Traditional responses to improve education outcomes that take a piecemeal approach may have some success but are unlikely to solve the 'wicked problems' that different education systems around the world face. The current 'learning crisis' is one such problem; access for OOSC whether due to conflict or due to stigma and marginalisation is another. Traditional responses are also unlikely to have success in maximising the education sector's contribution to achieving the other SDGs.

This report has drawn on the literature on systems thinking from various disciplines and has shown examples from practice in a number of jurisdictions. These examples are not perfect, and reform has not been without its challenges. Some of them may not be sustained due to the momentum in different system accelerators subsiding. However, what they do provide is a glimpse of a different future; one in which systems thinking can help policymakers and practitioners make faster and more sustained progress in achieving education and broader outcomes for the current and future generation of children and young people.

Traditional responses to improve education outcomes that take a piecemeal approach may have some success but are unlikely to solve the 'wicked problems' that different education systems around the world face

¹¹⁰ See Global Partnership for Education (2015)

‘Systems thinking expands the range of choices available for solving a problem by broadening our thinking and helping us articulate problems in new and different ways. At the same time, the principles of systems thinking make us aware that there are no perfect solutions; the choices we make will have an impact on other parts of the system. By anticipating the impact of each trade-off, we can minimize its severity or even use it to our own advantage. Systems thinking therefore allows us to make informed choices.’

Goodman (2018)



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