

## Chapter 2

### System thinking, system thinkers and sustainability

by  
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*Michael Fullan advises that thinking about the future is not enough for decision makers in education; it is also necessary to conceptualise how to change current systems in specific, powerful ways. He identifies three priority areas to consider: i) the challenge of change, ii) systems thinking, and iii) sustainability as the route to the future. Under the latter, Fullan presents a set of key elements including lateral capacity-building through networks, intelligent accountability, deep learning, dual commitment to short- and long-term results, and cyclical energising. The way forward, he suggests, is to put in place more practical system thinkers, who in turn will guide other leaders in the same direction.*

#### Change challenges

In recent years, there has been more attention paid to large-scale educational reform. One of the most ambitious examples of reform is England's National Literacy and Numeracy Strategy (NLNS). A multi-year evaluation of NLNS reached two main conclusions (Earl *et al.*, 2003). On the one hand, NLNS was an impressive and huge success. Literacy and numeracy achievement for 11-year-olds increased from just over 60% in 1997, to about 75% in 2002 – all this in 20 000 schools. On the other hand,

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the results levelled off in 2001, and have stayed at that level to the present. This plateau effect – which has been seen in other large scale projects involving whole school districts – signifies that the strategies that generated the earlier results were not sustainable in the next phase of reform. A different approach was needed.

Heifetz and Linsky (2002) confirm this conclusion in their distinction between technical problems (still difficult) for which the existing knowledge base is sufficient to address the problem, and adaptive challenges, for which current knowledge is not available to resolve the problem. The main properties of adaptive challenges can be defined as follows:

- The solution is beyond our current repertoire.
- Adaptive work requires difficult learning.
- The people with the problem are the problem and the solution.
- Adaptive work generates disequilibrium and avoidance.
- Adaptive work takes a longer time to work on effectively.

There is no doubt that the OECD “Schooling for Tomorrow” project represents an adaptive challenge of the highest order. Therefore, it will require new approaches that draw especially on systems and sustainability.

## Systems thinking

Clearly, systems thinking is relevant to changing organisations. This chapter argues that for systems thinking to be practically useful, practitioner-based system thinkers must be developed in action. In this respect the promise of system-thinking has fallen woefully short. No real practical progress has been made in actually promoting systems thinking since Peter Senge (1990) first raised the matter. As Senge laid out the argument:

*Human endeavours are also systems. They ... are bound by invisible fabrics of interrelated actions, which often take years to fully play out their effects on each other. Since we are part of the lacework ourselves, it is doubly hard to see the whole pattern of change. Instead, we tend to focus on snapshots of isolated parts of the system, and wonder why our deepest problems never seem to get solved. Systems thinking is a conceptual framework, a body of knowledge and tools that has been developed over the past fifty years, to make the full patterns clearer, and to help us see how to change them effectively. (p. 7, my emphasis)*

Recall that systems thinking is the fifth discipline that integrates the other four disciplines: personal mastery, mental models, building shared vision, and team learning. Philosophically, Senge (*op. cit.*, pp. 12-13) is on the right track, but his ideas are not very helpful in practice:

*[Systems thinking] is the discipline that integrates the disciplines, fusing them into a coherent body of theory and practice. It keeps them from being separate gimmicks or the latest organisation fads. Without a systemic orientation, there is no motivation to look at how the disciplines interrelate ...*

*At the heart of a learning organisation is a shift of mind – from seeing ourselves as separate from the world to connected to the world, from seeing problems as caused by someone or something “out there” to seeing how our own actions create the problems we experience. A learning organisation is a place where people are continually discovering how they create their reality and how they can change it. [my emphasis]*

As valid as the argument may be, there is no programme of development that has actually formed leaders to become greater, practical systems thinkers. Until we do this we cannot expect the organisation or system to become transformed. The key to doing this is to link systems thinking with sustainability – defined as the capacity of a system to engage in the complexities of continuous improvement consistent with deep values of human purpose.

## Sustainability

Conceptually the new work of leaders embraces systems thinking *and* sustainability in a way that grounds them practically in local context. The key to moving forward is to enable leaders to experience and become more effective at leading organisations toward greater sustainability.

Fullan (2004) defines eight elements of sustainability:

- Public service with a moral purpose.
- Commitment to changing context at all levels.
- Lateral capacity-building through networks.
- Intelligent accountability and new vertical relationships.
- Deep learning.
- Dual commitment to short-term and long-term results.

- Cyclical energising.
- The long lever of leadership.

In the remainder of this paper, I shall elaborate further on these elements of sustainability.

### ***Public service with a moral purpose***

Moral purpose must transcend the individual to become an organisation and system quality which collectivities are committed to pursuing in all of their core activities (Fullan, 2003b). Moral purpose can be defined in three ways with respect to schools: i) commitment to raising the bar and closing the gap of student achievement; ii) respectful treatment of people without lowering expectations; and iii) orientation to environmental improvement, including other schools in the district. Corporate organisations as well as public institutions must embrace moral purpose if they wish to succeed over the long run.

### ***Commitment to changing context at all levels***

David Hargreaves (2003, p. 74) recalls the observation by Donald Schon, best known for his work on the reflexive practitioner, thirty years ago:

*We must ... become adept at learning. We must become able not only to transform our institutions, in response to changing situations and requirements; we must invest and develop institutions which are “learning systems”, that is to say, systems capable of bringing about their own continuing transformation.*

It is not Schon’s fault that all these years later this advice remains totally accurate and totally useless. How do you enter the chicken and egg equation of starting down the path of generating learning systems in practice, especially in an era of transparent accountability? This article provides practical response to this question: there is now more powerful evidence that “changing the system” is an essential component of producing learning organisations.

Changing whole systems means changing the entire context within which people work. Researchers are fond of observing that “context is everything” usually in reference to the success of a particular innovation in one situation but not in another. If context is everything, then emphasis must be placed on how it can be changed for the better. This task is not as impossible as it sounds but will take time and cumulative effort. The good

news is that once contextual change is underway, it has self-generating powers to go further. Contexts are the structure and cultures within which one works. In the case of educators, the tri-level contexts are school/community, district, and system. The critical question to ask is whether strategies can be identified that will indeed change in a desirable direction the contexts that affect us? Currently these contexts have a neutral or adverse impact on what we do.

On the small scale, Gladwell (2000, pp. 150, 173) has already identified context as a key *Tipping Point*: “the power of context says that what really matters is the little things”. If you want to change people’s behaviour, “you need to create a community around them, where these new beliefs could be practical, expressed and nurtured”. Drawing from complexity theory, I have argued elsewhere that in order to attain system change, the amount of purposeful interaction between and among *individuals* within and across the tri-levels, and indeed within and across *systems* must be increased (Fullan, 2003a).

Therefore, the most essential first step is a commitment to changing context. The remaining six elements of sustainability, which work on a more practical level, follow automatically once the commitment to change has been reached. Commitment to change gives people new experiences, new capacities, and new insights into what should and can be accomplished. It gives people a taste of the power of new context, none more so than the discovery of lateral capacity-building.

### ***Lateral capacity-building through networks***

In the past few years, lateral capacity has been discovered as a powerful strategy for school improvement. This discovery was multi-phased. First, greater accountability leading to the realisation that support or capacity-building was essential. This in turn led to vertical capacity-building with external trainers at the district or other levels, which finally led to the realisation that lateral capacity-building across peers was a powerful learning strategy.

A systematic strategy-driven use of networks and collaboratives is evolving in England, partly as a response to the limitations of “informed prescription”. Many of the new network strategies are being developed by the National College of Schools Leadership (NCSL). For example, a consultant leaders programme now engages 1 000 of the most effective elementary school principals in the country working with 4 000 other schools. In this one strategy alone, 25% of all school principals in the country are involved in mutual learning.

There are a number of obvious benefits from lateral strategies (see also Hargreaves, 2003). People learn best from peers – fellow travellers 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 – discoveries that are in the mode of Heifetz and Linsky’s adaptive challenges (2002): “solutions that lie outside the current way of operating”. Leadership is developed and mobilised in many quarters. At the same time motivation and ownership – a key ingredient for sustainability of effort and engagement – is deepened at the local level.

Lateral capacity, however, is not the only strategy at work but functions in relationship to the other seven elements of sustainability. Complexity theory states that if the amount of purposeful interaction is increased and infused with the checks and balances of quality knowledge, *self-organising* patterns (desirable outcomes) will accrue. This promise is not good enough for the sustainable-seeking society with a sense of urgency. There are at least two problems. One concerns how the issues being investigated can result in disciplined inquiry and innovative results; the other raises the question of how good ideas being generated by networks can be integrated in the line operation of organisations.

### ***Intelligent accountability and vertical relationships***

Sustainable societies must solve, *i.e.* hold in dynamic “tension”, the perennial change problem of how to attain system-wide local ownership (including capacity) and external accountability at the same time. These problems can only be solved locally:

*Solutions rely, at least in part, on the users themselves and their capacity to take school responsibility for positive outcomes. In learning, health, work, and even parenting, positive outcomes arise from a combination of personal effort and wider social resources. (Bentley and Wilsdon, 2003, p. 20)*

Yet what will motivate people to seek positive outcomes? Furthermore, how are people and groups to be held accountable for the public or corporate good? The answer is a mixture of collaboration and networks with what David Miliband, the former UK Schools Minister, calls “intelligent accountability”. Networks and other professional learning communities (lateral capacity-building) do build in a strong yet incomplete measure of accountability. As such, communities interact to solve given problems in order to generate better practices, shared commitment, and peer accountability. Collaborative cultures are demanding when it comes to

results; and the demand is telling because it is peer-based and up close on a daily basis.

At the same time, vertical relationships (state/district, district/school, etc.) must be strengthened not only in terms of support and resources but also accountability. Some of these vertical relationships will come in the form of element five (deep learning) and six (short-term and long-term results). It will be difficult to find the right balance of vertical authority accountability – too much direction demotivates people; too little permits drift or worse. To address this problem, a strategy, “self-evaluation”, that has been around for at least 20 years must be reintroduced. In the past, self-evaluation has been touted as an alternative to top-down assessment. In fact, we need to conceive self-evaluation and use it as a both/and solution. Miliband (2004) in a recent speech advocated:

*An accountability framework, which puts a premium on ensuring effective and ongoing self-evaluation in every school combined with more focused external inspection, linked closely to the improvement cycle of the school... First, we will work with the profession to create a suite of materials that will help schools evaluate themselves honestly. The balance here is between making the process over-prescriptive, and making it just an occasional one-off event. In the best schools it is continuous, searching and objective. Second, [we] will shortly be making proposals on inspection, which take full account of a school's self-evaluation. A critical test of the strong school will be the quality of its self-evaluation and how it is used to raise standards. Third, the Government and its partners at local and national level will increasingly use the information provided by a school's self-evaluation and development plan, alongside inspection, to inform outcomes about targeting support and challenge. (pp. 6, 8)*

Not all systems have a formal inspection agency as in England. However, all systems do have some form of external accountability, which must be reconstituted so that it is too integrated with self-evaluation. And yes, it is extremely difficult to combine self-evaluation and outside evaluation, but herein lies the sophistication of sustainability – for the latter to have a chance, *the whole system* must be involved in a co-dependent partnership that is open to addressing problems as they arise.

### ***Deep learning***

Sustainability as defined in this paper requires continuous improvement, adaptation, and collective problem-solving in the face of complex challenges that keep arising. As Heifetz and Linsky (2002) say, adaptive work

“demands learning”, “demands experimentation”, and “difficult conversations”. Similarly, “species evolve whereas cultures learn”.

There are three major requirements for the data-driven society: drive out fear; set up a system of transparent data-gathering coupled with mechanisms for acting on the data; make sure *all* levels of the system are expected to learn from their experiences. One of Deming’s (1986) prescriptions for success was “Drive out Fear”. In the *Education Epidemic* (2003), Hargreaves argues:

*Government must give active permission to schools to innovate and provide a climate in which failure can be viewed as a necessary element in making progress as is the case in the business world. In other words, mistakes can be accepted or even encouraged, provided that they are a means of improvement. (p. 36)*

Pfeffer and Sutton (2000, pp. 109 and 124-255) devote a whole chapter to “When Fear Prevents Acting on Knowledge”: “In organisation after organisation that failed to translate knowledge into action, we saw a pervasive atmosphere of fear and distrust.” Significantly, Pfeffer and Sutton identify two other “pernicious effects”. One is that “fear causes a focus on the short run [driving] out consideration of the longer run”. The other problem is that “fear creates a focus on the individual rather than the collective”. In a punitive culture, if I can blame others, or others make a mistake, I am better off. Need I say that both the focus on the short run and excessive individualism are fateful for sustainability?

Second, capacities and means of acting on the data are critical for learning. Thus, “assessment for learning” has become a powerful, high yield tool for school improvement and student learning (see Black *et al.*, 2003). There are two critical aspects of the move toward more effective data use. First, avoid excessive assessment demands (Miliband talks about reducing necessary paper and information burden which distract schools from their core business). Second, ensure that a range of qualitative as well as quantitative data are collected. In discussion of knowledge building in “Leading in a Culture of Change”, I cite several examples including the US Army’s “After Action Reviews” which have three standardised questions: What was supposed to happen? What happened? And what accounts for the differences? This kind of learning is directed to the future, *i.e.*, to sustainable improvements.

Deep learning means collaborative cultures of inquiry which alter the culture of learning in the organisation away from dysfunctional and non-relationships toward the daily development of culture that can solve difficult or adaptive problems (see especially Kegan and Lahey, 2001; and Perkins, 2003). In a development sense, there is need to train and mentor current and



potential future leaders so that they can become proficient at shaping the culture of the organisation in the direction of day-to-day interactions that represent continuous learning.

The “curriculum” for doing this is contained in Kegan and Lahey’s seven languages for transformation (*e.g.*, from the language of complaint to the language of commitment), and in Perkins’ developmental leadership which represents “progressive interaction” which evokes the exchange of good ideas, and fosters the cohesiveness of the group. These new ways of working involve deep changes in the culture of most organisations, and thus the training and development must be sophisticated and intense.

### ***Dual commitment to short-term and long-term results***

Like most aspects of sustainability, things that appear to be mutually exclusive must be brought together. It is a pipedream to argue only for the long-term goal of organisations or society. Shareholders and the public would never permit this. The new reality is that governments and organisations have to show progress in relation to both short- and long-term priorities. Our knowledge base is such that there is no excuse for failing to design and implement strategies that get short-term results.

Of course, short-term progress can be accomplished at the expense of the mid- to long-term (win the battle, lose the war), but they do not have to be. I advocate that organisations set targets and take action to obtain early results and intervene in situations of terrible performance; at the same time, they must invest in the eight sustainability capacity-building elements described in this chapter. Over time, the system grows stronger and fewer severe problems occur as they are pre-empted by corrective action sooner rather than later. Shorter term results are also necessary to build trust with the public or shareholders for longer term investments. Barber (2004) argues that it is necessary to:

*Create the virtuous circle where public education delivers results, the public gains confidence and is therefore willing to invest through taxation and, as a consequence, the system is able to improve further. It is for this reason that the long-term strategy requires short-term results.*

### ***Cyclical energising***

Sustain is derived from the Latin word, *sustineo*, which means “to keep up”. However, this definition is misleading for sustainability is not linear. On the contrary, it is cyclical for two fundamental reasons. One has to do

with energy, and the other with periodic plateaus where additional time and ingenuity are required for the next adaptive breakthrough. Loehr and Schwartz (2003, pp. 9-14) argue that “energy, not time” is the fundamental currency of high performance. They base their work on four principles:

- *Principle 1:* Full engagement requires four separate but related sources of energy: physical, emotional, mental, and spiritual.
- *Principle 2:* Because energy capacity diminishes both with overuse and under-use, we must balance energy expenditure with intermittent energy renewal.
- *Principle 3:* To build capacity, we must push beyond our normal limits, training in the same systematic way that elite athletes do.
- *Principle 4:* Positive energy rituals – highly specific routines for managing energy – are key to full engagement and sustained high performance.

If we want sustainability we need to keep an eye on energy levels (overuse and under-use). Positive collaborative cultures will help because a) they push for greater accomplishments, and b) they avoid the debilitating effects of negative cultures. It is not hard work that tires us out, as much as it is negative work. In any case, we need combinations of full engagement with colleagues, along with less intensive activities which are associated with replenishment.

There is another reason why sustainability is cyclical. In many cases we have seen achievement in literacy and mathematics improve over a five-year period, only to plateau or level off. It may be related to burnout, but this is not likely the main explanation. People are still putting in a lot of energy to maintain the same higher level performance represented by the new plateau. If people were burning out, performance would likely *decline*.

A more likely explanation is that the set of strategies that brought initial success are not the ones – not powerful enough – to take us to higher levels. In these cases, we would expect the best learning organisations to investigate, learn, experiment, and develop better solutions. *This takes time*. (Incidentally, with the right kind of intelligent accountability we would know whether organisations are engaged in quality problem-solving processes even if their short-term outcomes are not showing increases.) While this new adaptive work is going on, we would not expect achievement scores to rise in a linear fashion, and any external assessment scheme that demanded “annual yearly progress” would be barking up the wrong tree.

Cyclical energising is a powerful new idea. We do not yet have the precision to know what cyclical energising looks like in detail, but the concept needs to be a fundamental element of our sustainability strategies.

### ***The long lever of leadership***

If a system is to be mobilised in the direction of sustainability, leadership at all levels of the system must be the primary engine. In this sense the main mark of a great leader at the end of his/her tenure is not his impact on the bottom line but especially how many leaders he/she leaves behind who can progress even further. This work includes helping to put into place all eight elements of sustainability – with all eight feeding on each other. To do this, we need organisations led by people who are trained and developed to think in bigger system terms and to act in ways that affect larger parts of the system.

### **Concluding remark**

Subsequently, we have been working in partnership with school districts and states to develop an agenda of bringing about system-wide change. We have presented a system solution for achieving “breakthrough” results for 90% or more of students in the basics, such as literacy (Fullan, Hill and Crevola, 2006). My analysis of turnaround intervention strategies from this perspective has found that they at best result in short-term improvements while establishing conditions that virtually guarantee that sustainability cannot result (Fullan, 2006). I have identified what it will take to increase the likelihood of sustainability, using Ontario as a case example.

In sum, we need a new emphasis on system reform which has at its core developing leaders who can take more of a system perspective with a sustainability focus. These I call “system thinkers in action” and there are indeed a number of developments on this front in England and other locations. Such leaders work in turn to develop and support other leaders who can go even further. The agenda for the OECD “Schooling for Tomorrow” project is to establish actual examples of system change and to learn from them to go deeper.

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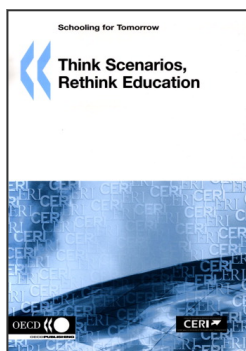
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