about learning goals so that educators, families, and students develop a shared understanding of the kind of learning and learners they want to develop. Some focus on getting the foundational literacies in place, while others are tackling the deep learning agenda accelerated by the digital world. The second aspect of deepening learning involves building precision in pedagogical practices. Precision develops as educators create communities of collective inquiry to build their collaborative expertise. They identify the new learning capacities and build precision in the new pedagogies and practices. Third, schools and systems create conditions and processes so that teachers and leaders can build their capacity to use the new practices and shift from less effective to more effective approaches. These are crucial areas of expertise that teachers and leaders need whether the focus is on closing the gap, improving foundational literacy, or pursuing the deep learning agenda.

Securing Accountability

The fourth component of the coherence framework acknowledges that the way to deal with external accountability is to build internal accountability—the capacity to measure progress from the inside out. This happens when the group takes self and collective responsibility for performance and engages with the external accountability system. The conditions that favor internal accountability include: specific goals, transparency of practice and results, precision of action (not to be confused with prescription), non-judgmentalism, commitment to assessing impact, acting on evidence to improve results, and engaging with the external accountability system. If one works on the first three components of the coherence framework—by focusing direction, cultivating collaborative cultures, and attending to deepening learning—the conditions for internal accountability become established, enabling the organization to contend with the external accountability system.

As schools, districts, and whole systems began to tackle the coherence agenda, they wanted to know more about how to deepen learning. The Coherence Framework provides an overarching frame for looking at innovation through the lens of whole system change. As our work in coherence and deep learning has been developing simultaneously, it has evolved to detail a whole system approach to fostering and propelling deep learning. While we are not yet seeing any state, province, or country that has moved to deep learning as a whole system, we are seeing some glimpses of what may be possible.

In this next section, we examine in detail how we have expanded this component of *deepening learning* into a framework with a set of tools and processes that accelerate and amplify the deepening learning process. We explore how the New Pedagogies for Deep Learning (NPDL) partnership draws on all four components of coherence to create a social movement to foster deep learning around the globe.

Making Deep Learning Coherent

Massive change to the status quo of traditional schooling is not a simple matter because it involves every level of the system and also because the environment is volatile and ever changing. It must be an ongoing process, and the change must occur at the macrolevel (whole system or society) and at the microlevel (individual and local). At the microlevel it means redefining the outcomes of learning, catalyzing new leadership, creating new environments and partnerships, developing new capacities to design and assess deep learning, as well as new ways of measuring and reporting growth. Given such complexity, how do we move from the traditional model of schooling—one of sort and select—to one that focuses on helping all young people flourish and develop the global competencies?

The NPDL global partnership is tackling this challenge of moving from fragmented sites of innovation to pervasive transformation by building knowledge of the practices that deepen learning and the conditions that foster deep change in whole systems. Members of the partnership join because they have an interest in developing deep learning and want to learn from and with others on the same journey. This work is about regular school systems changing the culture of the district and its schools to go deeper for all children. It's taking the best of what we know about learning and whole system change and using that to create a process for changing learning in every school and classroom. For the past 4 years we have been immersed in the factors that facilitate or hinder the movement toward deep learning in systems, schools, and classrooms. Interacting with everyone ranging from students to policy makers, we are learning a lot about transformation and causing a shift in practice that we could not have imagined.

Our aim is not simply to describe the NPDL initiative and then suggest it be scaled up, but rather to identify the practices and principles that are leading to success. These clues and common threads about how and why it works can then inform what it will take to transform learning for all and feed into future practice. We have captured these in the Deep Learning Framework.

A Framework for Deep Learning

Such massive transformation from traditional to deep learning calls for a model that can guide action without constraining it, that is comprehensive but not unwieldy. We set out with our partners to catalyze and enable a social movement to help scores of schools, districts, and systems become immersed in developing cultures of deep learning.

Simply mobilizing action is not the whole story because all change is not good. One of our colleagues is the New Zealand school improvement expert Viviane Robinson. We especially like Viviane because she refuses to accept vague assertions, and instead insists on specific designs and

We developed a Deep Learning Framework that intentionally details how the proposed change will produce the intended outcome, provides structures and processes that ensure the capacity to make the changes at all levels, and defines the change improvement regarding impact on learners.

explanations about change events. Her latest book, *Reduce Change to Increase Improvement* (2017), is no exception. As she puts it:

> By making the distinction between change and improvement, we increase leaders' responsibility for developing and communicating the detailed logic of how their proposed change will produce the intended improvement. (p. 3)

Accordingly, we developed a Deep Learning Framework that intentionally details how the proposed change will produce the intended outcome, provides structures and processes that ensure the capacity to make the changes at all levels, and defines the change improvement regarding impact on learners. The theory of action or causal pathway of NPDL is described in Figure 3.2. If the outcome we want is for all students to be deep learners, then we must ask, "What causes deep learning to be attained by all?"

Figure 3.2 • Deep Learning Framework
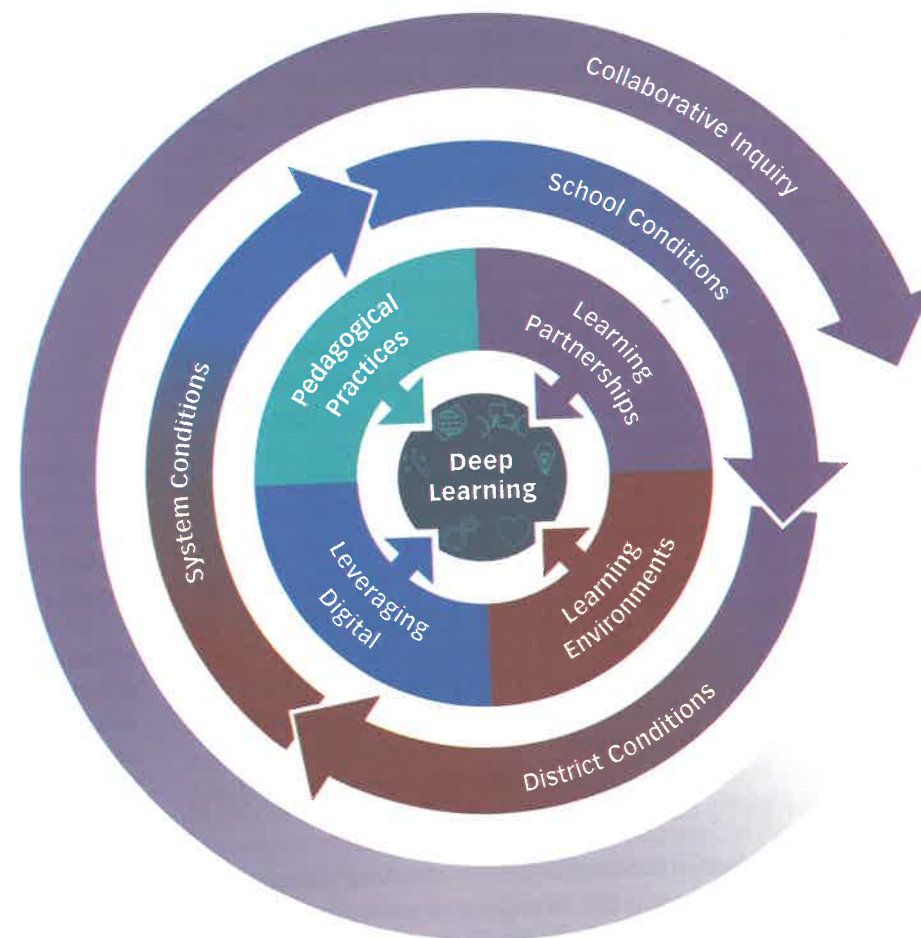
Working backwards, we see three key components. First, there must be clarity about the learning goals and what it means to be a deep learner. Second, it will only be fostered across all classrooms if we can define the learning process that makes it easy for teachers, leaders, students, and families to shift their thinking and practices. Third, it will only happen in whole schools and systems if we create the conditions for innovation, growth, and a culture of learning for all.

The deep learning framework supports the rapid spread of deep learning with a suite of tools and processes that can be adapted to fit the varied contexts of schools, districts, and systems and yet provides concrete ways to shift practice. Figure 3.2 depicts the four layers of the Deep Learning Framework as circles of support. Put as simply as possible and working backwards from the outcomes:

> Layer 1: Deep learning, defined as the **6Cs**, is the intended outcome.
>
> Layer 2: The **four elements of learning design** (practices, partnerships, environments, and digital) focus on developing the instructional experiences to accomplish the outcomes.
>
> Layer 3: **Conditions for deep learning** rubrics support schools, districts, and systems to foster deep learning.
>
> Layer 4: **Collaborative inquiry** surrounds the whole enterprise because deep learning requires continual learning at all levels.

Layer 1: Six Global Competencies for Deep Learning

The first circle of support at the center of the framework is deep learning, which is represented by the six global competencies: character, citizenship, creativity, critical thinking, collaboration, and communication. We define deep learning as *the process of acquiring these six global competencies*, also known as the 6Cs. These competencies describe the increasing complexity of thinking and problem solving, sophistication of collaborative skills, self-knowledge, and responsibility that underlies character and the ability to feel empathy and take action that makes one a global citizen. Building clarity about the learning outcomes in this layer is necessary if teachers, students, and families are to build common language and expectations. To measure progress we developed a more robust set of attributes and skills for each competency and tools called *learning progressions*.

Layer 2: Four Elements of Deep Learning Design

The second layer of the framework supports the learning design process. The four elements foster better learning design by bringing intentionality

and precision to the integration of *pedagogical practices, learning partnerships, learning environments,* and *leveraging digital.* Teachers and students are paying attention to these four elements to ensure that learning experiences incorporate the complexity and depth that facilitates growth and scaffolds the prerequisite skills and understandings to maximize success. As well, the elements lead to intentionality in building new relationships between and among teachers, students, and families and using digital to facilitate and amplify learning. Specific tools, including a *Teacher Self-Assessment Diagnostic, Learning Design Rubric,* and *Learning Design Protocol,* support teachers to create learning experiences steeped in each element of the new pedagogies.

Layer 3: Conditions That Mobilize Deep Learning

Deep learning shouldn't be left to just a few innovative teachers, principals, and schools, so the third layer or circle of support describes the conditions that mobilize deep learning to spread exponentially across schools and systems. This set of conditions pertains to the whole system at three levels: school, district or cluster, and state. The question is what policies, strategies, and actions best foster the development of the 6Cs and four elements of the deep learning design. Frankly, this takes us into complex territory, and we have been busy defining and developing the best versions of how to depict and support the development of these push-and-pull change factors. We are still working on the precise formulation. For now, we can think of five core conditions that would need to be present at each of the three levels (school, cluster or district, and state): **vision, leadership, collaborative cultures, deepening learning,** and **new measures/assessment**. Note that these end up being parallel to the four components of the Coherence Framework (direction, collaboration, precision in pedagogy, accountability, and leadership at the core). The rubrics for the five conditions can be used to identify strengths, areas of improvement, guides to improvement, and assessment of progress.

Layer 4: Collaborative Inquiry Process

Finally, the framework's outer circle depicts a collaborative inquiry process that grounds the work and fosters the interaction effect of all layers. While it is pictured as the outer circle, it is not a final step but rather permeates each circle by creating powerful conversations at every stage of development. The collaborative inquiry process may be used by teachers to design deep learning experiences, by teams to moderate student work and growth, and by teachers and leaders to assess the conditions needed to foster deep learning at the school and system levels.

Final Thoughts

It's not a matter of working through each of the circles of support in sequence but rather having an understanding of the parts and how they intersect and reinforce one another interdependently—this is the synergy of the circles of support. The model is dynamic and thus ramifies making the whole greater than the sum of its parts. The final circle of collaboration is key because it drives the *learning from the work* process. Collaborative examination of practices unleashes the power of contagion and mutual help by generating new knowledge and ideas that mobilize action synergistically. The challenge lies next in building the shared purpose and collaborative expertise to release the powerful mindset that together students, teachers, and families can transform learning.

Section II digs more deeply into each layer of the Deep Learning Framework by drawing on the experience of our NPDL schools, districts, clusters, and systems. We do this to share the practices and elements that are leading to a whole system movement to transform the learning process. We invite you to use our framework to find your own entry point. The six chapters in Section II examine the deep learning framework in action: portraying deep learning (Chapter 4); designing it (Chapters 5 and 6); enabling it through collaboration (Chapter 7); NPDL as whole system change (Chapter 8); and new measures to assess it (Chapter 9).