support every child
reach every student

accompagner chaque enfant
appuyer chaque élève

Ontario

21st Century Teaching and Learning
## Ontario Ministry of Education

Student Achievement Division Working Table

October 28, 2014

Learning Goals

- To provide an update on the Ministry's focus and evolving strategy for 21st Century Teaching and Learning

- To seek advice from sector leaders on strategic considerations as the Ministry determines how best to proceed with implementing Ontario's renewed vision for education

What is required for achieving excellence - learning, working and living for the 21st Century?
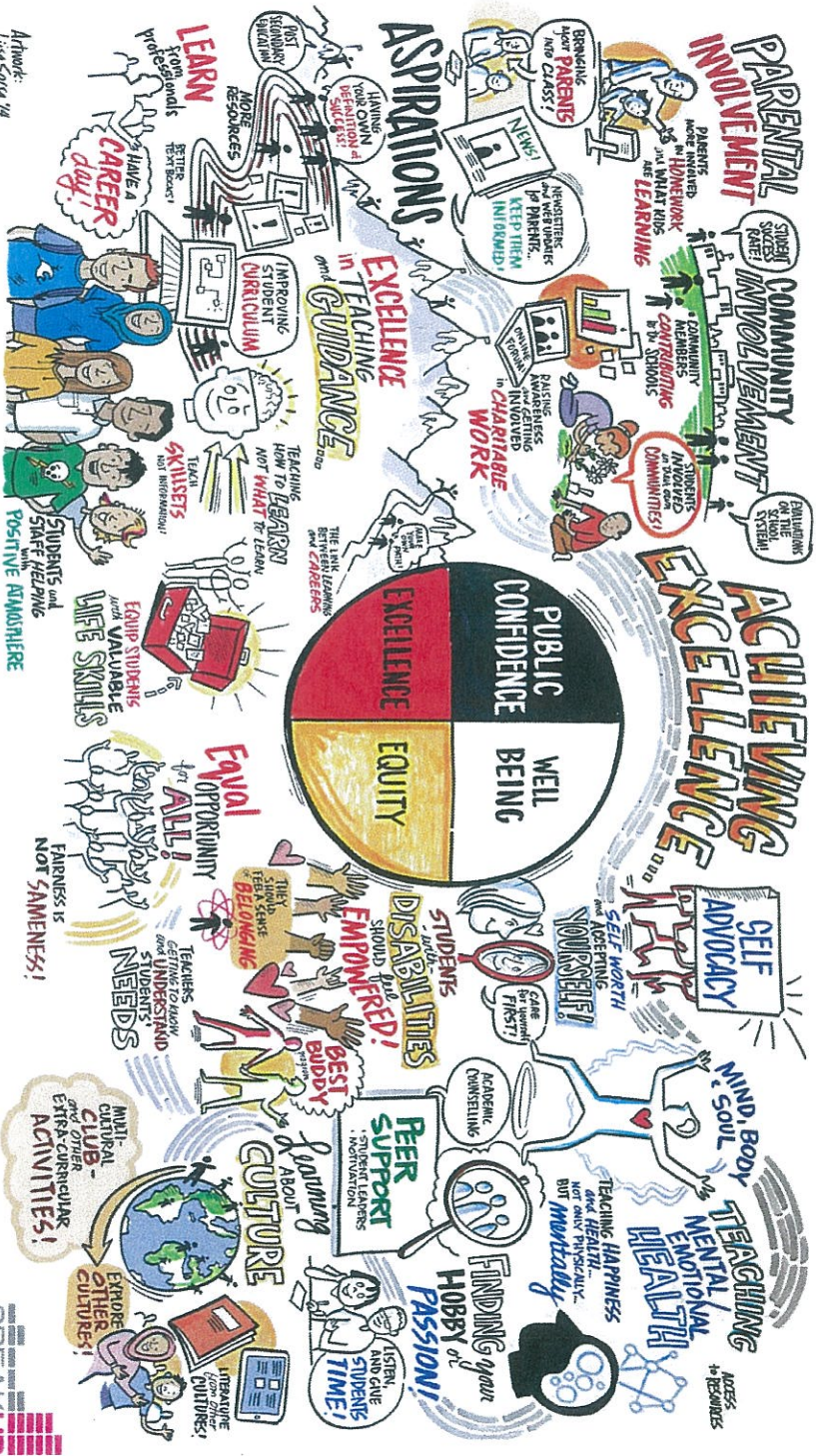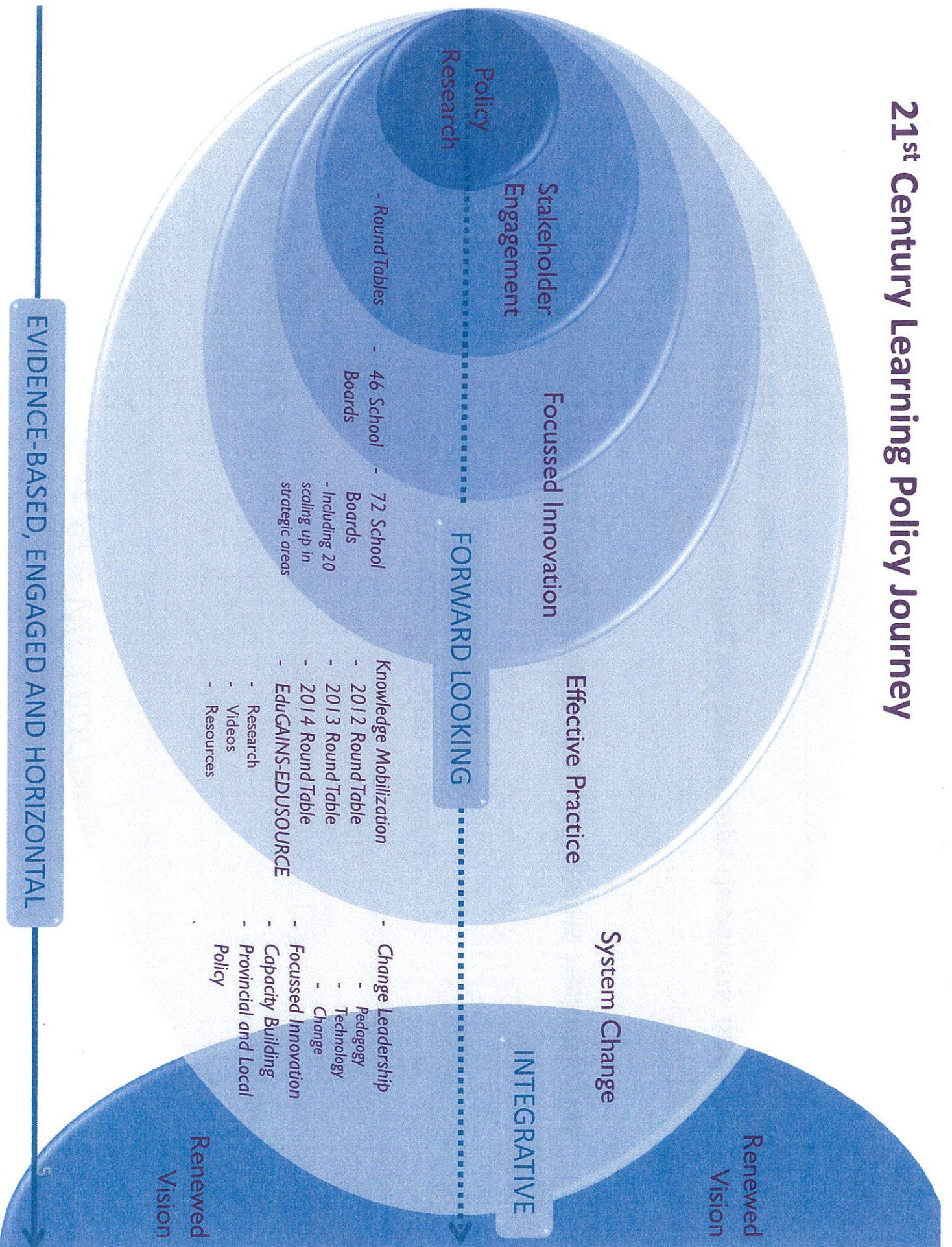
Achieving Excellence

*To assess **progress** towards this goal, Ontario will:*

- *Define and develop measures for higher-order skills, such as critical thinking, communication, collaboration and entrepreneurship.*

- *Work with teachers, principals, and supervisory officials and their professional associations to identify and share effective and innovative teaching practices that include the use of technology.*

*(**Achieving Excellence: A Renewed Vision for Education in Ontario**, April 2014, p.7)*

21st Century Learning Policy Journey

EVIDENCE-BASED, ENGAGED AND HORIZONTAL

Policy Research

Stakeholder Engagement

- Round Tables
  - 46 School Boards

Focussed Innovation

FORWARD LOOKING

- 72 School Boards
- Including 20 scaling up in strategic areas

Effective Practice

- Knowledge Mobilization
  - 2012 Round Table
  - 2013 Round Table
  - 2014 Round Table
  - EduGAINS-EDUSOURCE
    - Research
    - Videos
    - Resources

System Change

INTEGRATIVE

- Change Leadership
  - Pedagogy
  - Technology
  - Change
- Focussed Innovation
- Capacity Building
- Provincial and Local Policy

Renewed Vision

Educators are embracing change.

Pedagogy is driving technology decision-making.

There is an emerging pattern of evolving new technologies.

"Systems thinking" capacity is developing for technology decisions and "changing pedagogies for deep learning".

Voices from Ontario Innovation Leaders

- Launch school and system leaders videoclip

Students Are Experiencing Innovative Practices

- Online/blended learning
- Game-based learning
- Inquiry-based/ problem-based learning
- Students co-learning with teachers
- Technology-enabled cross-school project teams
- Mobile learning
- Digital citizenship and digital literacy
- System change accelerated by technology integration

- Learning through social action
- Real world, authentic learning tasks
- Technology-enabled cross-curricular approaches to credit accumulation
- Technology-enabled links between co-op placements and school
- Innovative spaces for learning

October 23rd Round Table

"Mobilizing Knowledge that Supports Collective Leadership Capacity"

- **Key supporting conditions for scaling up effective practices that link** technology, pedagogy, and 21st century competencies

- **Local innovation work within a broader context** of research about 21st century teaching and learning and in alignment with Ontario's renewed **vision for education**

- Professional learning **community of innovation practitioners and change leaders**

Keynote: Dr. Chris Dede (Harvard)

Transforming Education for the 21st Century:

The Process of System Scaling

US National Research Council (2000, 2012)
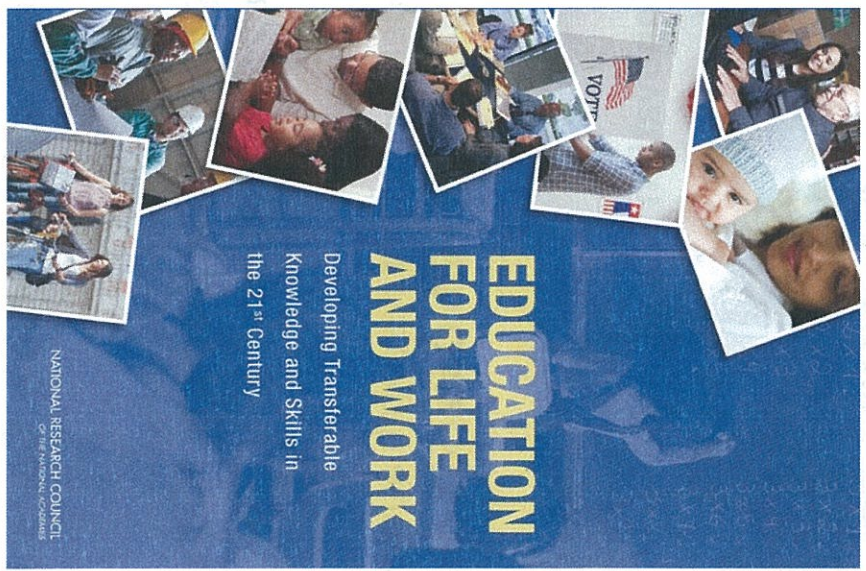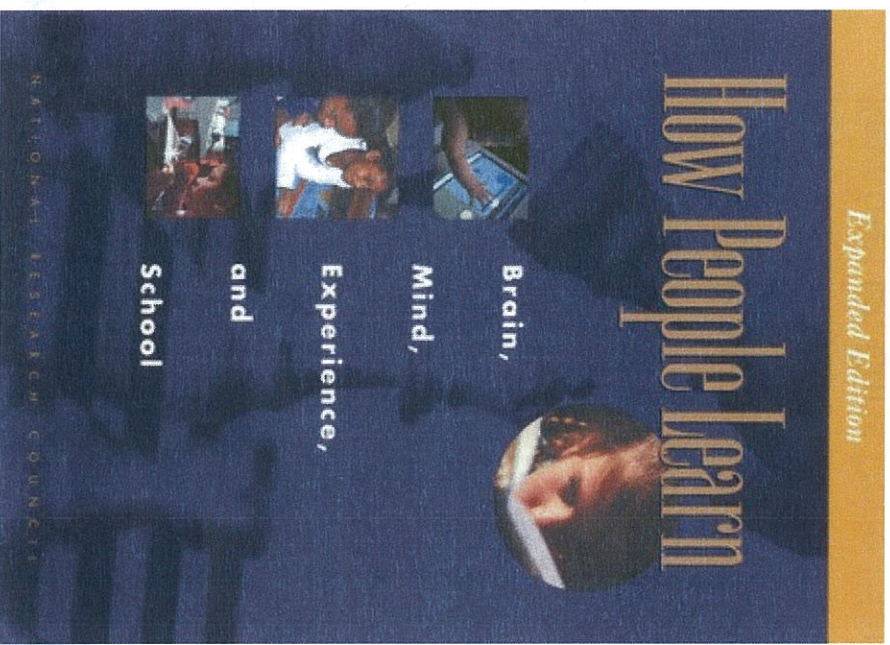
Types of Knowledge/Skills (National Research Council, 2012)

Cognitive Outcomes	Intrapersonal Outcomes	Interpersonal Outcomes
Cognitive processes and strategies	Intellectual Openness	Teamwork and Collaboration
Knowledge	Work Ethic and Conscientiousness	Leadership
Creativity	Positive Core Self-Evaluation	Communication
Critical Thinking	Metacognition	Responsibility
Information Literacy	Flexibility	Conflict Resolution
Reasoning	Initiative	
Innovation	Appreciation of Diversity	

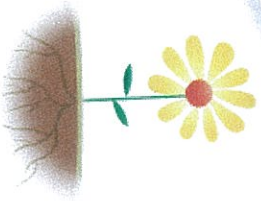# "Deeper Learning" (Dede Keynote)

- Case-based learning
- Collaborative learning
- Apprenticeships
- Self-directed, life-wide learning
- Learning for transfer
- Interdisciplinary studies
- Diagnostic assessments

You have a proven innovation you want to scale...

Exploring the Process of Scaling Up

What are the steps—and traps—in moving from innovation to broad-based adoption and consequential change?

	Depth	Sustainability	Spread	Shift	Evolution
Dimensions of Scale Taking an educational innovation completely to scale involves five dimensions that reflect different aspects of making an intervention effective in one setting useful across a wide spectrum of contexts.	Getting to scale produces deep and consequential changes in practice. Requires evaluation and research to understand and enhance the causes of effectiveness.	Sustaining scaled growth means maintaining these changes in practice over substantial periods of time. Requires robust design to enable adapting to negative shifts in context.	Scaling up is achieved by diffusion assumed by users, who deepen and sustain the innovation via adoption. Requires modifications to retain effectiveness while reducing the resources and expertise required.	Ownership of the innovation is assumed by its adapters, who become co-evaluators, co-designers, and co-scalers.	The innovation as revised by its adapters is influenced in reshaping the thinking of its designers. Requires learning from users' adaptations about how to rethink the innovation's model.
Sources of Leverage Each dimension provides leverage for the scaling process by evolving the intervention to increase its power, durability, applicability, and flexibility.	**Evaluation and Research** What are the sources of the innovation's effectiveness? What conditions does each source depend on for success? How sensitive is each source to these conditions? How consistent is the innovation with the current political and cultural context of educational improvement?	**Robust Design** How can the innovation be modified so that it functions in various types of inhospitable conditions? How typical is each condition for success in the target population of users? How can developers support varied users while evolving toward conditions for success that enable full effectiveness?	**Reducing Resources and Expertise** How much is the overall power of the innovation affected by reducing its cost or the knowledge required to implement it? How much power is retained in a light version that requires fewer resources or less expertise of its users? How can developers support light users to achieve full effectiveness?	**Moving Beyond Brand** How can developers support users going beyond what the originators have accomplished? How can developers build users' capacity as co-evaluators, co-designers, and co-scalers? How can users form a "community of practice" that helps answer questions about scale?	**Rethinking the Model** How can developers unlearn their initial beliefs, values, and assumptions about the innovation, and generate willingness to start the innovation process over again? How can developers facilitate reconceptualization and discontinuous evolution? How can developers form a "community of reflective redesign" with other innovators?
Traps to Avoid Evolving along each dimension requires the developers of the innovation to overcome traps that have both cognitive and affective aspects.	**Trap of Perfection** Developers should not seek an unattainable goal of perfection at the cost of deflecting resources from other dimensions of scale. (The great should not be the enemy of the good.)	**Trap of Mutation** Developers should ensure that the ways they modify the innovation to adapt to various inhospitable contexts do not undercut its core conditions for success.	**Trap of Optimality** Developers should realize a somewhat less powerful innovation that reaches much greater numbers of users is a step forward.	**Trap of Origination** Developers should not attempt to control the original innovation in ways that deter adaptation and further innovation by users.	**Trap of Unlearning** Developers' unwillingness to take a fresh look can prevent genuine evolution.

Strategic Considerations

- Expert guidance on scaling innovation — Dr. Chris Dede, Timothy E. Wirth Professor in Learning Technologies at Harvard Graduate School of Education

  – What scales is not innovation, but a model of innovation.

  – Scaling to each site requires adaptation to local context and culture.

Achieving Excellence

Working with our education partners ... will require taking evidence-based actions informed by broad collaboration.
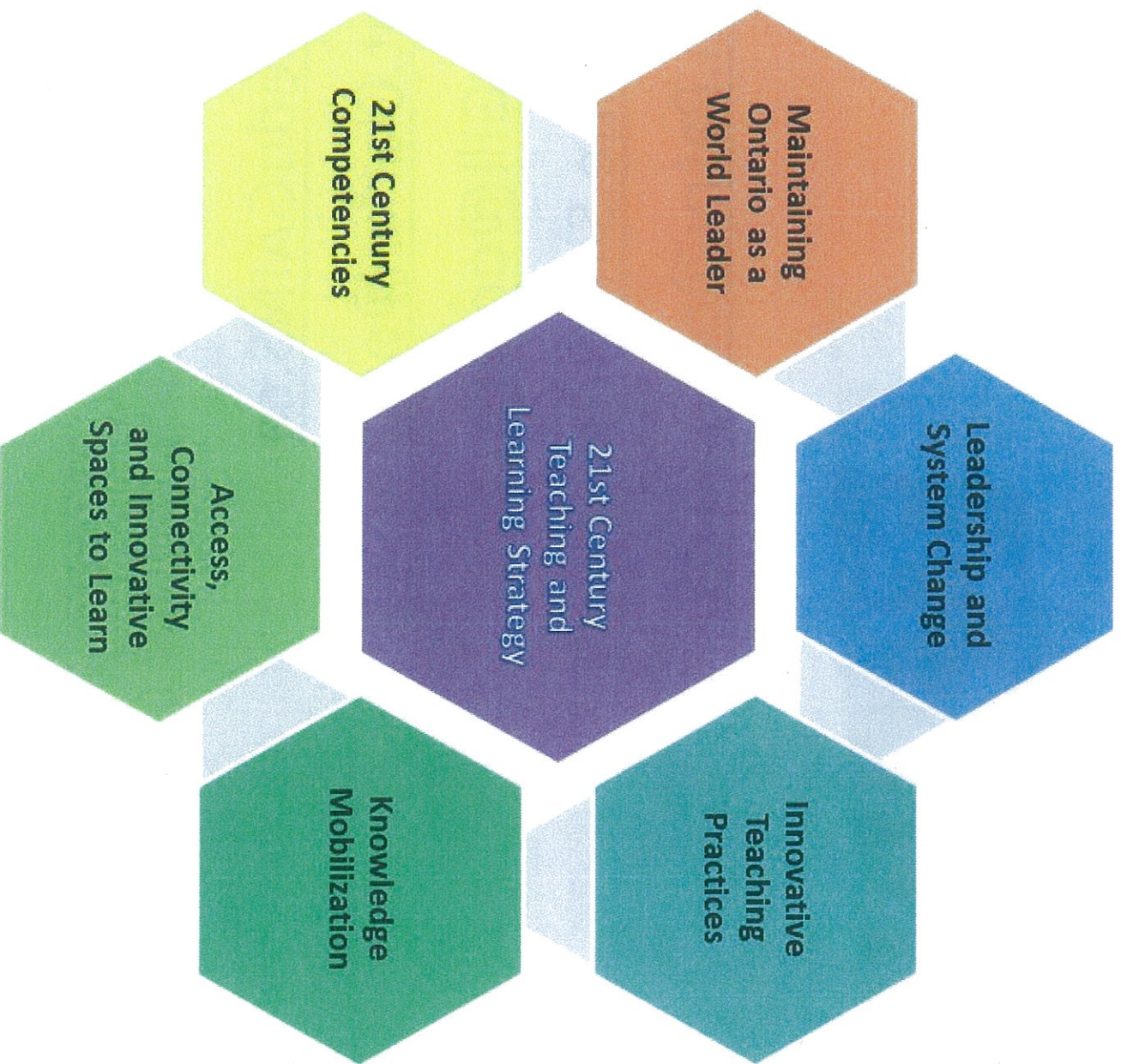
(2014 Mandate Letter: Education)

- Ontario is working to move innovative practices to scale "to create a system that is even more accessible, integrated and responsive."

- Our task is to modernize classrooms and support educators' efforts to bring innovation to learning."

(Achieving Excellence: A Renewed Vision for Education in Ontario, April 2014, p.20, p. 5)

Strategic Considerations – Roundtable Discussion

- How is your organization supporting innovative practices to meet the renewed vision for education in Ontario?

- What are some of the ways you could work with the Ministry and District School Boards in the future to enhance this work?

- In *A Rich Seam: How New Pedagogies Find Deep Learning*, Fullan and Langworthy describe 'new pedagogy for deep learning' as requiring educators to redefine learning tasks, "for and with their students, building in more opportunities for knowledge construction, problem-solving and implementation in the real world, and connecting the tasks to students' aspirations." How do we all work to support educators, school and system leaders to begin to redefine learning in this way?

21st Century Competencies

Maintaining Ontario as a World Leader

Access, Connectivity and Innovative Spaces to Learn

21st Century Teaching and Learning Strategy

Leadership and System Change

Knowledge Mobilization

Innovative Teaching Practices

Want to Learn More?

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THANK YOU