



Teaching Children to Think: Meeting the demands of the 21st century

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If your school years were anything like mine, you probably recall hours of memorizing information to be regurgitated in response to teachers' questions or during a test or exam. With the passing years, my retention and recall of all this information has been dimming. However, the potentially tragic loss of key information like the four levels on the Beaufort Wind Scale or the year that Ponce de Leon came to North America is not such a tragedy since I have been saved by modern technology – Google! All of this information and everything else from the number of teeth an elephant has to the date of the first rocket launch into space can be found at the click of a button.

The advantages that technology presents to the baby boomer generation are quite evident. However, as children in much of the world return to school, I have been wondering what the advent of immediately accessible search technology means to the present generation of children and to the way they are being educated. With information so readily available, the need to learn and memorize facts diminishes. But then what should education in the 21st century look like? That is exactly what educators around the world are in the process of figuring out! If accessible and efficient technology can drum up information for us in a way that is faster and better than we ever can, then maybe it's time to leave the drilling and regurgitation of facts behind us.

Today's kindergarteners may be entering the workforce around the year 2034. We have no idea what the world will look like in five years, much less 20 years. What we do know is that education in the 21st century will need to address a rapidly changing world filled with problems and possibilities that could not have been imagined several decades ago.

Shifting the Focus to Critical Thinking

To function and create change in this modern world, individuals need critical thinking skills – the ability to think about ideas or situations in order to fully understand their implications so as to be able to make an informed judgement or decision. Critical thinking includes skills such as questioning, predicting, investigating, hypothesizing, analyzing, reflecting, revising, comparing, evaluating and forming opinions. It involves an inquiry process of exploring issues that may not be clearly defined and for which there are no clear-cut answers. Critical thinking also includes metacognition – the process of thinking that enables us to reflect on our own learning as we develop knowledge and skills.

According to Tony Wagner in his book, *The Global Achievement Gap*, mastery of the basic skills of reading, writing and math is no longer enough. Instead, work, learning and citizenship in the 21st century demand that we all know how to think – to reason, analyze, weigh evidence and problem solve. He goes on to say that children will need seven basic survival skills to succeed in the world that awaits them:

- Critical Thinking and Problem Solving
- Collaboration across Networks and Leading by Influence
- Agility and Adaptability
- Initiative and Entrepreneurialism
- Effective Oral and Written Communication
- Accessing and Analyzing Information
- Curiosity and Imagination

Robert Fisher, a leading expert in developing children’s thinking skills, says that thinking is not a natural function like sleeping, walking and talking. Thinking, he stresses, is a skill that needs to be developed, and people do not necessarily become wiser as they become older. Children learn to think when adults take them seriously, engage them in meaningful conversations, inspire their imaginations and ask them questions that get them to think. This is exactly the approach that we need to incorporate into the classroom.

Re-defining the Role of the Teacher

According to many experts, to develop these basic skills, we need to re-define the role of the teacher and the student. Teachers need to move from primarily being the information keeper and information dispenser to being an orchestrator of learning where knowledge is co-constructed with the student. Teachers will become facilitators, guides, mentors, sources and resources who make use of spontaneous teachable moments to scaffold children’s learning. The 21st century will require knowledge generation, not just information delivery, and schools will need to create a “culture of inquiry” that is shared equally by teachers and students.

Addressing Critical Thinking Around the World

Ontario

Here in Ontario, where The Hanen Centre is located, there have been several initiatives to move towards creating a “culture of inquiry” in early childhood and kindergarten settings.

Early Learning for Every Child Today (ELECT): A Framework for Ontario Early Childhood Settings

Ontario has introduced ELECT as a guide to support curriculum and pedagogy in child care centres, kindergarten classrooms, home child care, nursery schools, Ontario Early Years Centres and other family support programs and early intervention services. ELECT draws from the theoretical foundation that early childhood is all about children learning how to learn. Children construct knowledge through physical

activity, social interactions with others and their own active thinking. Children practice the tools of learning: how to plan, monitor, revise, reflect, investigate and solve problems; and to see and exchange points of view with others. Children are viewed as capable and competent co-constructors of knowledge who are being groomed for the demands of an ever changing world (p. 18, ELECT).

ELECT also capitalizes on children's natural curiosity and advocates for play as an important means to early learning. It places a strong emphasis on having knowledgeable, responsive and reflective educators who participate in play to guide children's planning, decision-making and communication and extend their explorations.

Full Day Early Learning Kindergarten Program (FDELK)

Building on the foundations of ELECT, Ontario has also introduced a new Full Day Early Learning Kindergarten (FDELK) Program. Like ELECT, the FDELK Program recognizes that:

Today and in the future, children need to be critically literate in order to synthesize information, make informed decisions, communicate effectively and thrive in an ever-changing global community. It is important that children be connected to the curriculum; that they see themselves in what is taught, how it is taught, and how it applies to the world at large (p. 9, FDELK Program).

The FDELK teacher designs learning activities that are frequently play-based to capitalize on children's natural curiosity, and then extends children's learning by observing listening, questioning and modeling how to learn through inquiry. Children are guided in how to build on their existing knowledge to think creatively, explore, investigate, plan, monitor, reflect, experiment and problem-solve.

How Does Learning Happen?

The Ontario Ministry of Education has also recently released an additional document called, *How Does Learning Happen: Ontario's Pedagogy for the Early Years*, re-iterating the importance of play and inquiry and emphasizing that "problem-solving and critical thinking, communication and collaboration, creativity and imagination, initiative and citizenship are all capacities vital for success through school and beyond" (p. 9, How Does Learning Happen).

Other Canadian provinces

In addition to Ontario, six other Canadian provinces (New Brunswick, Prince Edward Island, Quebec, Manitoba, Saskatchewan and British Columbia) have developed early learning frameworks with Alberta and Newfoundland set to release theirs this coming fall. Like Ontario's framework, these documents address the development of critical thinking through play during interactions with responsive educators.

For example, the *Curriculum Framework for Early Learning and Child Care* in New Brunswick advocates for open and flexible environments where playful exploration, problem-solving and creativity are encouraged and purposefully planned.

The *PEI Early Learning Framework* sees children as co-constructors of their own learning who make their own meaning through individual everyday experiences and emphasizes the importance of the educator adopting the role of a facilitator rather than adopting a didactic approach to teaching.

In Quebec's document, *Meeting Early Childhood Needs*, play features prominently and children are seen as the primary agents of their development with educators being encouraged to "allow, facilitate, supervise, guide, coach and support the child on this road to autonomy." (p. 18).

Similarly, *Early Returns: Manitoba's Early Learning and Child Care Curriculum Framework* for Preschool Centres and Nursery Schools encourages educators to listen to children and wait for them to talk and to focus on open-ended question to stimulate their reasoning.

Play and Exploration, Saskatchewan's *Early Learning Program Guide*, views children as capable, competent, active co-learners with adults. The teacher's role is to observe and listen to children's ideas and scaffold learning by asking questions, contributing ideas and extending play.

The *British Columbia Early Learning Framework* also views children as powerful and competent and focuses on learning through play.

Beyond Canada

Looking beyond Canada's borders, we find very similar thinking about early childhood education in other parts of the world where many of Hanen's members are located, specifically in the UK, Australia and the US. Here's a sample of how this approach is reflected in the early learning frameworks around the world.

Statutory Framework for the Early Years Foundation Stage (UK)

Over the last few years, the UK's Department of Education has made revisions to their early years framework to encourage educators to spend more time interacting with children to promote creative and critical thinking skills and early language and communication. This framework emphasizes the role of planned purposeful play as a context in which children actively engage in exploring, investigating and thinking about problems. Educators respond to each child's emerging needs and interests to encourage children to develop their ideas and think critically.

Australia Early Years Learning Framework

The *Australia Early Years Learning Framework* views children as active participants and decision makers who construct their own understandings. Educators must be responsive to children's ideas and play and extend children's learning via open ended questioning, providing feedback, challenging their thinking and guiding their learning. Educators create learning environments that encourage children to explore, solve problems, create and construct and then engage in sustained shared conversations with children to extend their thinking. Play is highlighted as a supportive environment where children can ask questions,

solve problems and engage in critical thinking. Educators use strategies such as modelling, open questioning, speculating, explaining, engaging in shared thinking and problem solving to extend children's thinking and learning and foster higher-level thinking skills.

NAEYC Early Childhood Program Standards (US)

The National Association for the Education of Young Children in the U.S. has highlighted critical thinking and problem solving in their Early Childhood Program Standards. These standards require teachers to extend and deepen children's learning during play and activity centres that are teacher initiated and child initiated through posing problems and asking questions that build on children's prior knowledge and stimulate children's thinking. Teachers use open-ended questions such as, "What if...", "What do you think will happen next?", and "How did that happen?" to model and engage children in collaborative inquiry.

Common Core Standards (U.S.)

In the U.S., the Common Core State Standards have recently been introduced to establish clear, consistent guidelines for what every student should know and be able to do in math and English language arts from kindergarten through 12th grade. Development of the Common Core Standards began by identifying standards based on the end knowledge or goals for college and career readiness with a focus on 21st century higher order critical-thinking, problem-solving, reasoning and analytical skills that students need to be successful in school and beyond. Each of these goals was then back-mapped downward to create aligned grade level standards. The result is a K-12 curriculum in which each grade level contributes to the same set of goals and prepares students for the next grade's corresponding goals.

This focus on higher order thinking begins at the kindergarten level and is, for example, demonstrated in the Reading Standards, where an increased emphasis is placed on understanding and interpreting texts as opposed to the more typically emphasized decoding skills. Although the developmentally appropriate pedagogy required – how teachers should actually teach each standard at the kindergarten level – is still to be determined, the English Language Arts standards makes numerous efforts to address the development of the higher level thinking processes required for literacy success. To align with best practices in early childhood education, it is hoped that teachers will embrace play and read alouds as a meaningful pathway to learning and encourage the scaffolded, open-ended, collaborative conversations that engage kindergarteners in the co-construction of meaning.

The Stars Align for Hanen

So we see that early childhood education around the world is changing as the world changes. Early childhood educators and teachers are rising to the challenge of how to best prepare the future citizens of our world to meet the needs of the 21st century.

As Director of Early Childhood Education Services at The Hanen Centre, I spearhead programs and

resources that promote language and literacy development in early childhood settings. It is impossible to focus on language and literacy development without bumping up against early childhood education frameworks, philosophy, expectations and curriculum. Hanen Programs adhere to a social interactionist theoretical framework which affirms that language development occurs within naturally occurring social interactions with responsive adults. Convincing early childhood educators and teachers of the value of infusing language-rich interactions and conversations into their daily activities and routines has sometimes been a tough sell given the traditional emphasis on more didactic teaching that targets the development of specific skills. However, the increasing emphasis on the development of critical thinking in early childhood classrooms has created a whole new appeal for Hanen strategies.

The framework of interaction and information that guides Hanen Programs perfectly captures the essence of what a “culture of inquiry” requires, with interaction coming before information for optimal learning to occur. Children must first be engaged in active exploration and play evolving from their natural curiosity, with educators building on this interest to extend their learning. In Hanen’s two programs for early childhood educators/teachers, *Learning Language and Loving It* and *ABC and Beyond*, positive, responsive interactions result from educators using these strategies - Observe, Wait and Listen, Follow the Children’s Lead and Keep the Conversation Going!

Once children are fully engaged, it is time for information. Early childhood education standards and curriculum focus on developing higher order thinking. Teachers ask questions and model language that draw on critical thinking to plan, hypothesize, investigate, explore and problem-solve. Hanen’s *Learning Language and Loving It* and *ABC and Beyond* Programs foster critical thinking through extending the topic and enriching children’s understanding. In *Learning Language and Loving It*, extending the topic involves responding to children’s initiations or building on their interests by using language to talk about the past and future, think about reasons and explanations, project into others’ experiences, and imagine and pretend.

The *ABC and Beyond* Program focuses more directly on emergent literacy, highlighting not just the importance of decoding skills, but attributing particular importance to comprehension. The ability to read and understand between the lines in a text by drawing on existing knowledge as well as problem-solving and reasoning skills is stressed, especially once children move beyond simple texts designed to encourage decoding. In *ABC and Beyond*, educators learn eight different ways called the **Es** and **Ps** to engage children in using language for thinking and learning during book reading. The Es and Ps consist of 4 **Es** (explain, talk about past experiences, talk about emotions and feelings and evaluate) and 4 **Ps** (predict, problem-solve, project and pretend or imagine).

There is, in fact, complete alignment between effective collaborative inquiry with children and the implementation of Hanen strategies. Hanen strategies provide educators and teachers with the moment-to-moment skills they need to ensure that the vision and intentions behind early childhood standards and expectations become a reality. I look forward to continuing to work with early childhood education professionals around the world in our mutual quest to develop the critical thinking processes that our young children of today will need to thrive in the world of tomorrow.

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