Positioning Global Competencies

Within

Technology-enabled Instruction and Learning

A Brief based on the Findings from the Local Innovation Research Projects

Round 5

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The development and demonstration of 21st Century competencies for life, learning, and work is accepted globally as foundational to creating social and economic value. As global competencies are now a prime focus in education, the CSC research team has prepared a brief based on the findings presented in the Round 5 provincial report: *Mapping the Impact of the 21st Century Innovation Research Initiative on Students, Teachers, and Systems (2016)*.

Learning how to work in collaboration with others, to become effective communicators, to use creativity and imagination, to think critically, and to understand the concept of citizenship and its responsibilities are essential competencies for preparing for life in today's global society. Aspects of character development that highlight self-regulation, self-confidence, self-evaluation, and empathy are also a necessary part of learning to learn manifested as self-awareness and self-directed learning.

The data reported in the Round 5 research study clearly points to a consistent focus on the process of learning enabled by technology and, as part of that process, a very noticeable growth in the acquisition and demonstration of global competencies. For example, a number of the innovation research projects found that as opportunities for inquiry and problem solving increased, collaboration, communication, and feedback improved and overall interest and engagement was heightened as students worked with individual interests, talents, and learning styles. Teachers reported higher engagement, task completion, and increased success through encouraging student inquiry.

This document indicates where competencies are identified in the research team's Round 5 provincial report as affirmation that school boards are incorporating these globally recognized competencies as a planned and integral part of the move forward with technology-enabled teaching and learning.

In January 2016, as part of situating the work and gaining insight into the focus that the individual projects were taking for the Round 5 study, participants were asked to complete a project profile containing basic information about their innovation research that included a listing of elements to identify where they were investing their resources and efforts. In creating this listing, our research team used the information from the Letter of Agreement (LOA) for Round 5, as well as the areas of focus reported by the projects during our study for previous Rounds of the Technology Learning Fund (TLF) initiative. In listing the competencies, the research team called upon various international research publications to determine widely accepted terminology that would be inclusive of the life skills important for today's learners to acquire.

The data reported in the project profiles indicated that 57 English-language and 12 French-language innovation research projects intended to include some aspect of competency development in their planned project actions. Percentage wise, the focus on the development of 21st Century competencies reported by projects across the province was indicated as being 90%, and was the project element that had the highest rate of identified focus by districts. Sixty-one percent (61%) of the projects approached the competencies broadly by addressing all or most of the competencies as identified in the Ministry of Education's foundation document (Draft 2016). Twenty-nine percent (29%) targeted a particular subset of competencies, with collaboration and communication being the most frequently cited.

Building upon the four previous Rounds, the research team continued to document changes in teaching and learning that foster innovation in the development of global competencies throughout the Ontario education system. In their final submission, reporting on the impact of technology on student achievement, on teachers' instructional practice, and on system leadership, the projects made direct and strong connections with the global competencies.

One of the most noticeable features of the Round 5 projects is that there is positive acknowledgement at all levels of the education community that the competencies needed for life in the global community are those noted in the international literature and are consistent with the Ministry of Education's competencies foundation document (Draft 2016).

The forward direction across Ontario is paralleled in the international literature in which researchers such as Dede (2011, 2013, 2016), Fullan & Langworthy (2014), Fullan & Scott (2014), Robinson (2015), Fullan & Quinn (2016) have highlighted essential competencies such as learning collaboratively, becoming effective communicators, bringing creativity and critical thinking to learning, and building character that can hold learners in good stead as citizens in the competitive world of the 21st Century.

The degree to which the impact of the innovation research projects has shifted over the five Rounds of the innovation research study is clearly evident in a number of demonstrable ways that are also supported by the international literature. In both the innovation projects and the literature, it is clear that research-based knowledge about 21st Century competencies is becoming more evident in practice and more impactful on student engagement, learning, and achievement

Most prevalent of the competencies were **critical thinking**, **collaboration**, and **communication** as the instructional/learning process shifted to inquiry-based pedagogy. Words like "connections,"

"collaboration" and "communication" are repeatedly evident throughout the data, highlighting the continuing move to developing competencies.

Teachers are empowering students to inquire into their own driving questions, having them connect with their community and encouraging them to work **independently** and interdependently. A number of projects found that students were becoming more adept at leveraging digital tools to aid in collaboration, and were developing their ability to work independently and synergistically in teams with strong interpersonal and team-related skills. Seamless **collaboration** on projects was identified, even if students were in other classrooms, other schools, or other countries.

Several projects found that as opportunities for inquiry and **problem solving** increased, **collaboration**, **communication**, and feedback improved, and overall interest and engagement was heightened as students worked with individual interests, talents, and learning styles.

Teachers are recognizing that students are applying 21st Century competencies during the learning process. Competencies such as **communication** and **creativity** are clearly becoming part of the vocabulary of learning and instruction. One teacher noted: *"I see where some of my lessons were already touching on 21st Century learning, but I notice in my planning that I am thinking about those competencies now."* Another project stated that: "*Technology has allowed us to foster a spirit of **creativity** which has had a positive impact on student achievement."*

Teachers and administrators indicated that the use of technology is an integral part of student learning: "*We believe that students learn more deeply through conversation and collaboration, and through engaging in creative processes, and as such the ability to record and reflect on their learning."*

Several projects shared that students' **self-regulation** is impacted by technology use. A project stated that technology is providing students with opportunities to foster curiosity, engage in learning tasks, build **independence**, and promote **innovation** in ways that were not possible without it.

Teachers place students in the position of responsibility for gathering examples of their progress, reflecting on their own skills, and presenting this information in a way that demonstrates improvement over time. Students are able to learn and demonstrate effective **thinking** strategies in areas of personal interest, and they are taking more ownership for their own learning. A project noted that a personalized

approach to assessment in the junior and intermediate grades speaks to a growing emphasis on assisting students to hone their ability to **self-regulate** their learning.

Student voice and choice, and a move toward more **independence** and **self-regulation** in learners, teacher as facilitator and activator (Fullan & Donnelly, 2013), and whole systems being involved in professional learning (Fullan & Quinn, 2016) are energizing practices that impact every aspect of learning.

A number of projects indicated that as part of technology-enabled learning, students are increasing their understanding of the world and their role as **global citizens**. A project reported that students are aware of both global and local issues and understand they can play a role in making a change in the world. In terms of expanding inquiry beyond the local area, a teacher noted that: *"Students are now realizing that the world outside the classroom is accessible and is part of their learning and seeing ways to explore and connect with others. They are becoming aware of sharing their own learning with parents, [other] students, and other people in education who are not a direct part of the classroom."*

Projects reported that as teachers recognized that technology-enabled instruction and learning supported the development of global competencies, they constantly sought different strategies for guiding students' learning. Teachers are enlarging their focus in their professional learning beyond how to engage students to include ways and means of measuring student achievement within a context that models and promotes global competencies.

In Summary…

Throughout the Rounds of this research study, it has become evident that the Ontario education community is engaging in a diverse and exciting range of initiatives that are fostering deeper learning and enhancing pedagogical practices. While the school boards are at varying levels in this process, there is clear evidence of positive growth in promoting and incorporating the global competencies into their efforts.

As reported in Rounds 3 and 4 and again in Round 5, the learning and growth reported across all projects highlights the increased attention to the development of 21st Century competencies that are central for deep learning as described by Fullan & Langworthy (2014). The new pedagogical practices, noted by Fullan & Langworthy (2013) continue to be embraced by teachers as they worked collaboratively with peers and their own students and shifted their instruction to accommodate student

voice and leadership. They supported more inquiry-based classroom environments where students were able to embrace a more self-directed approach to their learning, taking more pride in and responsibility for their work. The evolving partnership of students and teachers in the learning process foregrounds the importance of the critical thinking and reflection so necessary for constructing new knowledge in a rapidly changing, interconnected, and technology-driven world.

As Fullan & Langworthy (2014) write: *"We are at the early stages of a learning revolution that will define in specific terms the citizen of the future as a knowing, doing person who can function productively in a complex world."*

Final Words …

The CSC research team appreciates that the direction of the TLF initiative is constantly evolving in determining ways to support quality teaching and learning, especially as it relates to preparing Ontario students with the skills they need to be successful in a competitive, globally connected, and technologically-engaged knowledge society and economy.

As education has increasingly moved into a global sphere in the 21st Century, ways of enhancing connections between research, policy, and practice have become central for developing relevant skills in teaching and learning.

By establishing a specific context for gathering the data around competencies, identified at the beginning of the research for 2016-2017, our research team's work will complement and connect with other aspects of the province's direction with regard to global competencies.