

District School Board Ontario North East: 2015 - 2016

Project Title	Making Student Thinking Visible by Redefining Our Tasks
Description	<p>For the 2015-16 school year, our innovation research project will build off our 1:1 pilot projects from last year as we spread our 1:1 initiative from 3 classrooms to all grade 7 through 10 classrooms. Our inquiry question is: <b><i>“What is the impact of a 1:1 iPad environment on student achievement, and engagement?”</i></b></p> <p>To determine the answer to the inquiry question we will employ the following theory of action:</p> <p><b>“IF</b> we provide professional development to teachers on the effective use of iPad technology and the SAMR model, <b>THEN</b> teachers will use the iPad to transform/rewrite their instructional practices.”</p> <p><b>“IF</b> teachers transform/rewrite their instructional practices with a focus on fostering creativity, critical thinking &amp; collaboration with the iPad as the tool, <b>THEN</b> students will be more engaged.”</p> <p><b>“IF</b> students are more engaged, <b>THEN</b> they will make their thinking visible through the use of the iPad.”</p> <p><b>“IF</b> students make their thinking visible, <b>THEN</b> teachers will be able to provide precise, timely, feedback.”</p> <p><b>“IF</b> students receive precise, timely feedback, <b>THEN</b> their achievement will improve.”</p> <p>Our board has made a substantial investment in 21st Century learning by purchasing an iPad for each student in grades 7 through 10, and for all teachers. Not only has redefining learning been supported through a hardware investment, but also through a human resource investment with the hiring of 5.5 Innovation Coaches (iCoaches) to support teachers in the effective integration of technology. Each of these coaches works with a small group of schools to support teachers on redefining their tasks, and incorporating the iPad into their pedagogical tool kit.</p> <p>The iCoaches support teachers on three diverse levels, depending on the teachers’ readiness. The first level of support is helping teachers with “iPad Essentials” and foundational skills. This level of support is focused on gaining technology skills and learning to use the iPad. The next level of support “Integration” which is focused on effectively integrating the iPad, and various applications, into classes and curriculum. The third level of support is “Redefinition” which is focused on redefining learning and helping teachers to reach the redefinition level of SAMR by using technology to make learning authentic, personalized, and real-world. When teachers can redefine their tasks and learning opportunities for students, students can develop the ability to be innovative and creative thinkers.</p>

	While the iCoaches are working with all teachers in grade 7 through 10, they each will have 3 teachers with whom they will work closely to monitor the impact of the iPad on student learning and engagement.
Context	<p><i>Number of students: 400</i></p> <p><i>Number of teachers: 11</i></p> <p><i>Number of schools: 18</i></p> <p><i>Grades/Program: Gr.7-10, Language, Math, Science</i></p>
Impact on Students	<p>Our student survey shows that</p> <ul style="list-style-type: none"> <li>• 76.8% of students are using the technology in their classroom daily</li> <li>• 53.3% of students report that technology has improved their overall</li> <li>• 57.9% of students report that the technology has improved their organization.</li> <li>• 51.5% of students said they were more likely to complete assignments when using the technology.</li> </ul> <p>Our survey also asked students to reflect on how well the technology helped them to develop their 21st Century Competencies. Students reported the following:</p> <ul style="list-style-type: none"> <li>• 55.1% agreed the technology helped them to understand how they learned best, and how to be a self-directed learner</li> <li>• 58.7% agreed the technology helped them develop collaboration skills</li> <li>• 59.7% agreed the technology helped them develop communication skills</li> </ul> <p>We looked at how many students performed at level 3 or above in each strand for Language and Mathematics, as reported in the report card. We made comparisons based on how each cohort did against themselves. For example, we looked at how many students in grade seven this year, performed at level 3 or above, and then looked at how many students in grade 6 last year, performed at level 3 or above. Some results are shown below.</p> <p><b>Grade 6 2014 to 2015</b></p> <p>Language % of students at level 3 or above  Media: 80.7%  Reading: 61%  Writing: 59.2%  Oral Language: 76.7%</p> <p><b>Grade 7 2015-2016</b></p> <p>Language % of students at level 3 or above  Media: 85.6%  Reading: 69.1%</p>

	<p>Writing: 61%</p> <p>Oral Language: 70.7%</p> <p><b>Grade 7 2014-2015</b></p> <p>Mathematics % of students at level 3 or above</p> <p>Number Sense: 61.5%</p> <p>Measurement: 65%</p> <p>Geometry &amp; Spatial: 77.1%</p> <p>Patterning &amp; Algebra: 62.5%</p> <p>Data Management: 71.2%</p> <p><b>Grade 8 2015-2016</b></p> <p>Mathematics % of students at level 3 or above</p> <p>Number Sense: 64.4%</p> <p>Measurement: 76.2%</p> <p>Geometry &amp; Spatial: 73.2%</p> <p>Patterning &amp; Algebra: 81.9%</p> <p>Data Management: 75%</p> <p><b><u>Secondary Achievement</u></b></p> <p><b>Grade 9 Credit Accumulation (% of students earning all credits)</b></p> <p>2014-2015: 79%</p> <p>2015-2016: 85%</p> <p><b>Grade 10 Credit Accumulation (% of students earning all credits)</b></p> <p>2014-2015: 75%</p> <p>2015-2016: 79%</p> <p><b>Grade 9 Applied Classes with Improvement in pass rates from the previous year</b></p> <p>ENG1P: increased from 84% to 86%</p> <p>MFM1P: increased from 86% to 95%</p> <p>SNC1P: increased from 88% to 90%</p> <p>FSF1P: increased from 93% to 100%</p> <p><b>Grade 10 Applied Classes with Improvement in pass rates from the previous year</b></p> <p>CHC2P: increased from 92% to 96%</p> <p>ENG2P: increased from 87% to 93%</p>
<p><b>Impact on Instruction</b></p>	<p>The change in educator practice was monitored through an Educator Technology Profile (ETP) survey, from Apple Education. Our baseline survey, conducted in the fall, had 78% of teachers use of technology fall in the substitution category, and 22% in the substitution/augmentation category. This information was used to</p>

	<p>plan the types of teacher supports provided by the iCoaches. Many of our teachers still needed foundational supports on how to use the technology, and how to integrate it into the curriculum meaningfully. Our post ETP survey, conducted in June, showed 64% of our teachers' technology use being in the substitution level. 20% of teachers were in the substitution/augmentation level, with 6% being in the augmentation level, and 10% in the modification level.</p> <p>We also conducted a task analysis to determine where student tasks were placed along the SAMR continuum. As the iCoaches worked with teachers, they classified where the task fit on the SAMR model. In the fall, 92% of the tasks fit in the substitution level, and 8% fell in the augmentation level. This spring, 55% of the tasks fit in the substitution level, 24% fall into augmentation, 18% in modification, and 3% in redefinition. The data shows that our teachers are changing their practice, as they become more familiar with the technology tools they are using. School visits by innovation lead principal, superintendents, and the District Reviews were also used as part of the monitoring. As teachers and students became more familiar with the technology, the nature of the tasks started to change. Students are given more choice in how they show their learning, as they can choose a tool or application that is best suited to their learning style. Teachers have started shifting away from text based tasks, and allowing students to use more multi-media to demonstrate their learning.</p>
<p><b>Impact on System</b></p>	<p>This year represented a major scaling effort. The first half of the year, our iCoaches found their time was monopolized with helping teachers in the area of “Foundational Skills” on how to use the technology. However, as students became more familiar with the technology, they became the teacher support for foundational skills. We trained and organized a group of students in each school to function as “Digital Ambassadors.” Once teachers became more familiar with the tool, our iCoaches could shift their time to supporting teachers in redefining student learning by moving along the SAMR model and shifting out of substitution.</p> <p>To help ensure that pedagogy is the driver, and not technology, we have not made a specific section for technology in our Board Improvement Plan, nor our School Improvement Plans, rather, we have chosen to embed technology in the work we are already doing. This shift has resulted in the iCoaches and the curriculum coaches working closely together. The iCoaches support our curriculum coaches in effectively leveraging technology in the area of literacy and numeracy, and the curriculum coaches support our iCoaches in how to use high yield strategies. This alignment of work has helped to move our teachers’ pedagogy and our student achievement. The innovation lead, also works with senior admin, and principals, much like the iCoaches work with teachers, to</p>

	<p>ensure that they are co-learners and model the risk taking required to use technology as well. Having principals and senior admin on the same page has helped to move effective technology enabled pedagogy forward. Our innovation work from the previous year, with the 3 pilot classrooms, taught us that teachers need “just in time” differentiated support to move their practices forward.</p> <p>The project also required that we made major infrastructure investments to support mobile devices for learning. Investments were made in our: bandwidth, wide area network, access points, tablets, and storage. As well, a 4-year replacement plan has been drafted to ensure the technology is refreshed. This has required some careful budgeting and long term planning.</p>
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