

Waterloo Region District School Board: 2015 - 2016

<b>Project Title</b>	WRDSB Digital Learning Project: An Inquiry into Learning through the Change Process
<b>Description</b>	<p>The purpose of the project is to deepen our understanding of system change by utilizing technology as a disrupter in an effort to build professional capital and create a culture of collaborative professionalism.</p> <p>There is a precise focus on collaboration (teacher-teacher, student-student), creativity, and identifying the factors and conditions for scaling change that improves learning and teaching, as enabled by technology.</p> <p>The intent of the work in this project is to disrupt thinking to build decisional capital (i.e., ability to make judgements wisely based on research and experience), develop shared leadership (co-learners/co-leaders) and accountability through collaborative work (i.e., social capital), and increase teacher capacity with regards to collaboration (i.e., personal capital). The project is also framed around the Geoffery Moore’s model of innovation and Prochaska/DiClementi’s research on stages of change. Tools are being developed to determine an individual’s stage of change, with regards to collaboration, and identify the factors needed to move the innovation across the “chasm”.</p> <p>This is a multi-year project which began in 2009 with an overall goal to envision the future of education as affected by technology. It focused on identifying the factors and process to change teacher practice to realize a vision of a future state. Throughout the many iterations of the Digital Learning Projects, technology has been the common catalyst for changing teaching and assessment practices; our hypothesis being that technology provides disruption and permission for teachers to change their teaching to include more student-student collaboration (along with explicitly teaching of collaboration), opportunities for student voice and choice to support differentiated instruction, and changing assessment practices to include more formative and engaging assessments with descriptive feedback to promote deeper learning.</p>
<b>Context</b>	<p><i>Number of students: 1,227</i></p> <p><i>Number of teachers: 56</i></p> <p><i>Number of schools: 14</i></p> <p><i>Grades/Program: Gr.9-12</i></p>
<b>Impact on Students</b>	<p>The implementation of digital learning projects has greatly impacted student engagement, learning, and achievement. Teachers reported greater student engagement as a result of their changes in practice related to instruction and assessment, by utilizing technology. During interviews with Futures Forum Project students, the students indicated more engagement because of the opportunities</p>

technology provide for cross-school collaboration, access to authentic audiences, and more choice in learning materials.

There was evidence through teacher reflections to support a strong relationship between the depth of the technology integration into teachers' instructional and assessment practices to an increase in the amount of student engagement, learning, and achievement. The more a teacher embraced technology as a tool to assist with their classroom work and the more seamlessly they took advantage of the features of technology, the more the students seemed to engage. There was increase in achievement due to the focus on 21st Century Competencies (e.g., collaboration), utilization of technology, and student inquiry (e.g., choice).

Technology impacted student engagement by supporting learning at anytime from anywhere. Teachers reported using cloud-based learning management systems to provide students with information and assignments, facilitate discussions, share calendar notifications, and provide descriptive feedback. The availability to access a website during class, after class, in school, or at home has made learning available to students 24 hours a day from any location. This convenience made it easier for the students to participate in learning, provided more flexibility to respond to student voice and choice which resulted in increased engagement. Students are seeing the activities of the classroom, in other words the learning process, as part of their everyday life.

Teacher to student learning partnerships became more innovative and creative as well with the use of technology. For example, teachers could communicate with students by typing messages directly onto the student work or leave audio messages.

The greatest growth has been in the way in which technology has enriched communication. Students communicated synchronously or asynchronously using blogs, chat tools like Today's Meet, Twitter, Facebook, and Google Hangouts. They used these communication tools to work with other students in their class, in other classes within their school, with other classes within the board, and with students across Canada and the world. The impact of technology has been its ability to bring authentic purposes and audiences to the students' work, which they find extremely engaging.

Student learning has increased with the use of technology in the digital learning projects. During the formative stage, the ability to provide continuous feedback to students working digitally increased engagement, but teachers also reported that this has increased student resiliency. Student learning has increased because technology allows for more choice and differentiation learning opportunities in classrooms. Learning by students occurred through accessing texts, audio files, and videos, as well as experts through the Internet. Teachers reported that

	<p>student achievement had increased, in part, because technology allowed for students to create final projects that were more complex in nature due to the availability of more resources and alternative thinking.</p>
<p><b>Impact on Instruction</b></p>	<p>Common across all of the digital learning projects involved in the research was the impetus that the teachers go back to the curriculum to build their instructional and assessment plans; the overall expectations were more carefully reviewed and clustered. With a focus on more student collaboration and offering students more opportunities for choice, teachers collaborated to revisit and revise how their courses were taught. The projects caused teachers to plan more collaboratively. A reason the teachers were open to planning more collaboratively and including more student collaboration and choice was that they had access to more technology in their classrooms. The technology served as a disruption to their normal way of teaching and so when they began to revisit past practice in light of new technology, the opportunity was presented to insert collaboration and choice into their practice. The impact was to have teachers become more facilitators of learning rather than controllers of it.</p> <p>We also found that board wide initiatives with monthly professional learning sessions helped to develop system wide teacher collaboration (i.e., teacher-teacher learning partnership) whereas without these projects teachers would work in their schools usually in isolation. The support created system wide conversations and sharing of best practice not normally the culture.</p> <p>One of the significant impacts of technology has been on the ability to support learning to be differentiated spontaneously. If something comes up in class where students want to look up information regarding an area of interest, create or communicate on social media; they no longer have to wait two weeks until they get booked into the computer lab. With mobile technology in the classroom, when learning wants to happen the teachers take advantage of it.</p> <p>Teachers also reported that technology has impacted their work with more vulnerable students. Students who have a habit of losing their work can find it when it's worked on using cloud based technology (no lost papers). The impact on student – teacher communication partnership has been significant. Teachers can better access student learning and provide students with feedback; meaning more vulnerable students are getting more timely and precise support.</p>
<p><b>Impact on System</b></p>	<p>The Digital Learning Projects undertaken by the board over the last 6 years have been as measured and scalable as they have been innovative and creative. From the onset of the work we have been guided by the concept of scalability.</p> <p>BIPSA targeted collaboration this year and the projects all focused on collaboration as a central tenet for engaging students and causing change in instruction and assessment practices enabled by technology.</p>

	<p>Besides increasing student engagement through the use of collaboration, the teachers involved in the research are also became school and system leaders allowing us to develop trainers that could speak to using collaboration as a teaching strategy in staff meetings and department offices.</p> <p>The research project began in Round 1 with 7 teachers in 7 schools. From that small start we now have plans to roll out mobile technology (Chromebooks) to every grade 9 student in the fall of 2016.</p> <p>To get to this point where we can plan to roll out devices on such a large scale, the initiative carefully monitored the successes and challenges, after each iteration of the research project, and adjustments were made as required. When integrating multiple subjects together, for the Futures Forum Project, into a timetable became too challenging for many schools, targeted sections of non-integrated courses in English and Geography were pursued. When Wi-Fi proved to be an effective tool to support learning, it was expanded to all schools.</p> <p>Very early in the research participants started to identify the 4Cs (21st Century Competencies) of collaboration, communication, creativity, and critical thinking as contemporary skills for a student living in the digital age. Following the lead of research and informed by the digital research project the board adopted the 4Cs into the BIPSA which has morphed into 6Cs (adding positive character and contributing citizen). Along the way the progress of the students has been monitored, whether it be through online surveys, interviews, data on credit accumulation, or teacher observations. Through the work of the research project there have been opportunities to ensure engagement, learning, and achievement were key centre pieces to the work.</p> <p>In the past few years the work has focused on the challenges of providing supports for teachers with a range of experiences and skill sets. This year, each digital learning project completed a collaborative professional learning cycle of inquiry into some aspect of student need. Centrally facilitated, these cycles walked teachers very deliberately through the Learning Cycle of plan, act, access, and reflect. The teachers were provided with technology to support the work in class to enhance student engagement. The learning cycles for the English teachers, for example, showed that students improved in their ability to infer while reading. The Geography teacher learning cycle showed that students improved their geographic thinking. The processes this year showed that technology supported learning cycles worked successfully because of the focus on student work and technology-enabled learning and teaching.</p>
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