Abstract

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Our education system must change to meet the needs of today's learners. A focus on mastery and personalization requires new ways to support, assess, and communicate student learning. Research focused on 21st century learning, formative assessment, self-regulation, and digital portfolios led to a project designed to support educators as they make the shift to a more formative and student-centred approach to teaching. Stories of Change is a place to share innovative practices, access resources, and connect with others. This website is a meta-portfolio where educators can make their professional learning visible, seek and provide feedback, and learn from each other, thus creating a community of practice.
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Dedication

I dedicate this project to my husband and my two daughters. I cannot express how grateful I am for their love, support, and understanding throughout this process.
Chapter 1: Introduction

Background

Times are changing. What it means to be a learner and an educator is being redefined and reshaped to keep pace with the technological advancements of the 21st century. Our education system must transform to meet the needs of a knowledge-based society where information is only a click away (Premier's Technology Council, 2010). Representatives of teachers, administrators, and members of the Ministry of Education came together as the Premier’s Technology Council (PTC) to conduct extensive research and consultation as they envisioned a new system of education. The document they produced, *A Vision for 21st Century Education*, gives us a picture of what our system could look like. British Columbia is also going through the process of redesigning curriculum and assessment documents. Draft versions of the curriculum were made available for feedback over the last year and final documents are expected to be ready this fall (British Columbia Ministry of Education, 2013b).

The traditional stand-and-deliver approach to teaching meets the needs of very few. Sir Ken Robinson reminds us that, “Education is inevitably, unavoidably, and properly personal. You cannot treat people as homogenous units going through education. All of us have different capacities, different interests, and different passions” (Learning without Frontiers, 2011, 17:24). Our system needs to meet the needs of the diverse learners in our care. The changes proposed in the British Columbia Education Plan, and within our new curriculum, are rooted in personalized learning (British Columbia Ministry of Education, 2015; PTC, 2010). There is greater emphasis placed on learning how to learn, and not what to learn, as students pursue individualized educational paths that take into consideration their strengths, needs, interests, and passions (British Columbia Ministry of Education, 2015; PTC, 2010). In a system where personalized learning is valued, students will take an increasingly active role in their education, and as such, assessment for learning will play a central
role in guiding their progress (British Columbia Ministry of Education, 2015; British Columbia Ministry of Education, 2013c). Classroom assessment will not be an event, but instead, will be a seamless and ongoing part of all learning (British Columbia Ministry of Education, 2013c). This type of assessment gives students information when they need it, which is during learning and not after the fact when it is too late. Students, parents, and teachers all have an important part to play in the assessment process.

With the changes being made towards personalization, students must be provided with a wide variety of opportunities to demonstrate their learning (British Columbia Ministry of Education, 2013c). Educators and students will need a way to document, assess, and communicate student growth and progress. There is a need to move toward meaningful descriptions, collections, and demonstrations of student learning that will enable and encourage communication and engagement between students, parents, and teachers (British Columbia Ministry of Education, 2013c). In the Ministry of Education’s (2013) document, Toward Better Communication, it is stated that parents want more frequent updates and discussions about their child’s education. Portfolios are suggested as a way to, “provide parents with more insight into their child’s learning and a better understanding of what their child is working on in real-time” (British Columbia Ministry of Education, 2013a, p. 10).

Portfolio assessment can be used to capture learner performance, thinking, and creativity when it is happening, making it accessible to the student, parents, and teachers (McLaren, 2012). A student’s portfolio can be used as a powerful assessment and communication tool to support learning. Digital portfolios have the ability to be transformative in our classrooms, but have only been slowly introduced into higher education and more recently into K-12 classrooms (Meyer, Abrami, Wade, Aslan & Deault, 2010). Unfortunately, there is a lack of empirical research involving students’ portfolios in K-12 education to inform our practice (Barrett, 2007; Meyer et al., 2010).
Most research has focused on the use of digital assessment practices in higher education (Barrett, 2007; Johannesen, 2013; Meyer et al., 2010).

**Professional Journey and Relevance**

Change can be both exhilarating and frightening at the same time. While in a hypothetical place, the possibilities of change are endless and fill your mind with visions of what could be. Moving to a place where the change becomes a reality, can cause thoughts of, “What have I done?” or “Did I really think this through?” Depending on the size and complexity of the change, the task of putting the wheels in motion and seeing it through can be overwhelming at best and anxiety-provoking at its worst. There is also that time, referred to as the implementation dip, where the obstacles seem too big or the challenges seem to outweigh the effort required to carry on, and a person finds themselves wanting to revert to old and easier ways.

Two and a half years ago, the opportunity to become an administrator at my elementary school presented itself. My initial response was to not even consider the idea, but after much thought, the making of several pros versus cons lists, and discussions with my family, I decided that this was something I should pursue. After 18 years as a classroom teacher, I may have been becoming too comfortable. It was probably time for another chapter and challenge in my career.

I always thought that I could do the most good and make the most difference in my classroom. For as long as I can remember, I have wanted to be a teacher. I love that I go to work each day and learn alongside my students. There is never a dull day, with something new to discover and explore around every corner. As I began to think more seriously about becoming an administrator, I got excited about the possibility of being a part of change on a larger scale as a member of our district team. An added bonus, was that I would continue to teach nearly 80% and would not have to give up what I love so much.
The groundwork for the changes we would make at our school over the next two years was a long time in the making, with seeds planted over several years, and influenced by many educators with whom I have been associated. I have always struggled with traditional assessment and reporting. Issuing report cards three times a year seems ineffective and a poor representation of learning. These summative reports cannot begin to give a complete picture of a child as a learner. Worse yet, is the assigning of a letter grade to represent an entire term or year’s worth of learning. This is something that ate away at me each time I found myself teaching an intermediate class. I love the Paul Dressel quote, “a mark or grade is an inadequate report of an inaccurate judgment by a biased and variable judge of the extent to which a student has obtained an indefinite amount of material.” (Kohn, 2006, p. 24). This claim is also supported by measurement researchers, who found that teacher-made assessments had a reliability of 0.5, which means they should be rendered unusable (Frisbie, 1988). Further, what does a letter grade actually tell you? Do you know the student’s strengths? Do you have any understanding of their challenges? Does it convey the progress they have made or the goals they have set for themselves?

I have always been interested in finding a different way to communicate student learning, but I was not really sure what it would look like, or if it was even possible within the constraints of the provincial guidelines for reporting. In the summer of 2013, these ideas started to come together and take shape. In July, as part of the British Columbia Principals’ and Vice Principals’ Association Short Course for new, and not so new administrators, I had the opportunity to connect with other educators who were already making changes to the way they were assessing and reporting student learning. In October of the same year, while at a British Columbia Ministry of Education-led Quality Teaching and Learning session in Vancouver, I had the pleasure of hearing Rod Allen, who held a leadership position within the Ministry of Education, speak. Rod spoke about how the Ministry was rethinking their role in the transformation of education. He said they no longer thought of themselves as driving
the change, but instead they saw their role as enabling and supporting it. Rod told us, that in regards to communicating student learning, the Ministry was encouraging us to take risks. He said that the educators in the process have to drive the change and asked us, “When will what we know, change what we do?” He then challenged us to, “Just do it!” Challenge accepted.

The first of such changes we would make as a school was the decision we made to look at how we were communicating student learning. We wanted to move away from traditional reporting to a model that would honour each child and where they were in their learning journey, focusing on strengths, areas for growth, and the setting of goals. Assessment needed to be ongoing and provide a picture of the entire learning process so that students could monitor their progress and take more responsibility for their own learning. We also wanted to engage and involve parents in an authentic way, allowing them to be more involved in, and better able to support their child’s learning. Our new model included portfolio assessment, redesigned documents to replace report cards, the removal of letter grades, and three-way conferences to share work, review progress, and collaboratively set goals. As we redesigned our model, we had the support of other educators, schools, and districts that were making similar changes. I am grateful to these educators who were so willing to share their journeys in hopes of helping others.

The second change came as we were working through this process as a staff. Over the course of 2013/2014 school year, I became very interested in digital portfolios. I had been hearing wonderful things about a British Columbia-based platform from educators I follow on Twitter. In May, after researching the platform for myself, I decided to give Freshgrade (2011) a try in my K-3 classroom for the remainder of the year. I had been using a class and individual blogs with my students since January 2010 with great success. We used our blogs to share and document our learning. Our blogs flattened our classroom walls and invited others from around the world to learn with us. I saw digital portfolios as a perfect fit with the work we had done to change the way we
communicated student learning. I wanted something that I could use as more of a formative assessment and communication tool. Unlike our blogs, the digital portfolios would have a limited audience (student, parents, and teacher). They would be a place where a student could document and reflect on their learning, where they could receive and respond to feedback, and where we could provide parents with a window into the classroom and opportunity to be a part of their child’s learning on a regular and ongoing basis.

When it was time to choose a focus for my Master’s project, digital portfolio assessment seemed like a perfect fit. This would provide me with the opportunity to further ground my practice in research and also allow me to create something that might help others making similar changes in their own classrooms, schools, and districts.

Project Overview

Problem statement. Our education system has been framed for summative assessment and the reporting of student progress through traditional report cards and letter grades. The changing vision and philosophy of education in British Columbia demands that assessment practices follow suit. With a focus on mastery learning and growth, students need a way to document their learning, set goals, and monitor and reflect on the progress they are making. Teachers need a way to assess and support learning that honours each child wherever they are along their learning path, and parents need a way to be more involved in their child’s learning and have a voice in the assessment process. Digital portfolio assessment offers a way to meet these needs, but educators are going to require support as they make the shift to a more formative and student-centred approach to teaching. Furthermore, this support would ideally be peer-to-peer as the practical aspects of implementation are critical to understanding and success.
**Purpose.** The purpose of this project is to explore the use of digital portfolios to support student learning, facilitate authentic assessment, and increase parental involvement. The research questions addressed include:

- How can digital portfolios be used as formative assessment tools to support and improve student learning?
- How can digital portfolios be used by professional educators to make their learning about change in pedagogical practices visible for increased system change?
- How can digital portfolios be used as effective tools to support meaningful communication between students, parents, and teachers for both student learning and professional learning?

In order to answer the above research questions, educators need to share their learning from their daily practice of trial and error and successes in implementation. The answers come from a collective as opposed to an individual person or paper. It is my goal that the project itself will act as an educational resource for those that are interested in changing their practice or who are looking for support.

**Description.** I will be working collaboratively on this project with fellow Master’s student and teacher, Jane Rees. Her project, Capturing, Assessing, and Communicating Student Learning in a Digital World, is searchable in University of Victoria’s DSpace [http://dspace.library.uvic.ca](http://dspace.library.uvic.ca). The project we have created will address the need to provide educators with support and resources as they embrace digital portfolio assessment. Early adopters are risk-takers, often embracing change wholeheartedly without certainty of how it will go, but many educators need to see the change first, or have an example to follow. What if there was a place to share the pockets of innovation and change occurring in classrooms, schools, and districts around our province? We have documented the process of creating a blog that will not only be a place to share, but will also be an educational
resource for those interested in digital portfolio assessment. In an effort to make our learning as professionals visible to others, this blog will act as a meta-portfolio where contributors can share their stories and get feedback from others interested in change, thus creating a community of practice. Initially, we thought the stories would focus on change in the area of formative assessment, and digital portfolios in particular, but we decided not to delimit the topics for other contributors to the blog. The reason for this is that change in education is highly interconnected. In order for change in one area of practice to occur, it likely depends on other variables to follow suit. It is our hope that this blog will include all innovative practices as well as stories of change from beyond the borders of our province.

Conclusion

In this chapter, I have discussed the changes being made to our educational system and what these changes mean for educators in our province. I have also shared my personal journey and its relevance to digital portfolio assessment and the project that has been created. In the following chapter, I introduce the theoretical framework I use and the research literature on the topics of personalized learning in a 21st century context, formative assessment, self-regulated learning, and portfolio assessment. The preliminary sources used to find scholarly articles were the ERIC database, Summon, and Google Scholar. Articles were searched for using the following keyword logic: ("digital portfolio" OR "electronic portfolio" OR eportfolio OR e-portfolio) AND (kindergarten OR "grade 1" OR "grade one" OR "grade 2" OR "grade two" OR "grade three" OR "grade 3" OR "primary years" OR "primary school" OR "elementary school" OR "elementary education"). I have also included additional articles found through the exploration of reference lists or through the recommendations of other educators and professors. The journal articles included in the literature review are primarily from the last five years, with the exception of four articles that I felt were important to include from 1998, 2005, 2007, and 2009.
Chapter 2: Review of the Literature

Theoretical Foundation

Those looking at learning through a constructivist lens believe that learning is an active and constructive process where the learner constructs knowledge rather than acquires it. Knowledge is created through personal experiences, reflections on those experiences, and through the connections the learner makes to prior knowledge. Jean Piaget and Lev Vygotsky are two important figures in the development of Constructivist theory. Piaget is often thought of as the originator of Constructivism as a formal theory. He suggested that new knowledge is constructed through the processes of assimilation and accommodation. As learners interact with their environment they assimilate new knowledge, adding it to their current understanding, or accommodate this new information by transforming existing ideas or creating new ones. According to Piaget, an ideal learning environment is one that allows children to construct knowledge for themselves and not simply be imparted on them (Piaget, 1964). Piaget believed the teacher should take the role of a mentor guiding learners, instead of a lecturer transmitting ready-made solutions (Piaget, 1964). Vygotsky is known for Social Constructivism. Social Constructivism places more emphasis on the social context of learning. Vygotsky is well known for his theory of the Zone of Proximal Development, recognizing that with adult or peer guidance, students can work beyond their developmental level (Vygotsky, 1978). The more knowledgeable other, be it an adult or more advanced peer, plays an important role in learning (Vygotsky, 1978).

Constructivist educators encourage students to build knowledge for themselves and take more responsibility for their learning. Students in a constructivist environment are actively engaged as they ask questions of themselves and reflect on their learning. In constructivist classrooms, there is a cycle of questioning, interpreting, analyzing, assimilating, and accommodating as students create and alter their understanding of concepts (Li & Chen, 2010). This type of learning requires the student to
develop metacognitive and self-regulatory skills. The teacher’s job is to create the learning environment where this type of knowledge creation can occur and flourish as they guide students along their learning paths.

This literature review will focus on changes in pedagogy and practice around assessment and communicating student learning, and more specifically digital portfolio assessment. The shift to a more student-centred, personalized philosophy of education calls for new ways to assess, document, and share student learning. Students, parents, and teachers all need to be involved in this process. In this chapter, research around personalized learning in a 21st century context, formative assessment, self-regulated learning and their connection to portfolio assessment will be reviewed.

21st Century Context

The key issue being promoted in education in British Columbia today is personalized learning (British Columbia Ministry of Education, 2015). Students in today’s classrooms are increasingly offered the opportunity to follow their passions and interests. This is a far cry from the traditional one-size-fits-all curriculum of the past. To achieve this, our education system must change to better engage students in personalized learning while equipping them with the skills and competencies required to be lifelong learners (British Columbia Ministry of Education, 2015). Education today must take into account each child’s interests, strengths, areas for growth, and aspirations (British Columbia Ministry of Education, 2015). Students in our classrooms will need to take increasingly active roles in designing their learning paths as they move through school and will be expected to take more responsibility for their learning and success (British Columbia Ministry of Education, 2015).

In order to be able to successfully implement personalized learning, our approach to assessment must also change. Standardized tests only offer a limited view of students’ skills, their learning, and development (McLeod & Vasinda, 2009). “Learning is a complex and
multidimensional process which is often difficult to capture, assess and communicate to stakeholders” (McLeod & Vasinda, 2009, p. 29). Educators need additional ways to analyze learning and its complexities. The way student learning is communicated will need to change and evolve as well. Meaningful ways to communicate must be created to support dialogue around learning with parents, students, and teachers (British Columbia Ministry of Education, 2013c). “Traditional report cards are a snapshot into the past” (British Columbia Ministry of Education, 2013a, p. 10). Communication three times a year in a formal report card full of check marks, letter grades, and effort marks cannot begin to communicate the complete picture of student learning. It must be an ongoing process and provide information about all aspects of a child as a learner. Parents, students, and teachers should know where every child is in their learning, how they are doing with their learning, and where they are going next with their learning (Halbert & Kaser, 2013).

Assessment for learning will be central within the redesigned British Columbia curriculum and assessment framework (British Columbia Ministry of Education, 2013c). In the ideas presented in the government documents, assessment is presented as an ongoing seamless part of the learning cycle involving students, parents, and teachers (British Columbia Ministry of Education, 2013c). It is expected that as students take increasingly more responsibility for their learning, they will also take more responsibility for assessment. In the following section, this connection to student responsibility is explored further in the research reviewed on formative assessment.

**Formative Assessment**

Formative assessment, or assessment for learning, is a powerful factor in promoting student learning (Barrett, 2007; Clark, 2010; Eyal, 2012; Johannesen, 2013; McLaren, 2012; Wiliam, 2011). The Organization for Economic Cooperation and Development (OECD) defined formative assessment as “frequent interactive assessments of students’ progress and understanding to identify learning needs and adjust teaching appropriately” (OECD, 2008, p.1). Another helpful definition is
that given by the Assessment Reform Group in 2002, “Assessment for Learning is the process of seeking and interpreting evidence for use by learners and their teachers to decide where the learners are in their learning, where they need to go and how best to get there” (p. 2). Clark (2010) lists eight key principles of formative assessment that students need to engage in, including:

- to be able to understand clearly what they are trying to learn, and what is expected of them
- to be given immediate feedback about the quality of their work and what they can do to make it better
- to be given advice about how to sustain improvement
- to be fully involved in deciding what needs to be done next
- to be aware of who can give them help if they need it and have full access to such help
- to be able to build knowledge of themselves as learners, and become metacognitive
- to take more responsibility for their learning and participate more in the process of learning
- to engage parents and carers in the learning process (p. 345)

Traditionally, assessment has typically been perceived as something that happened at the end of a lesson, unit of study, or term (Pamer, 2007). This type of assessment, referred to as summative assessment, implied that learning was something with a beginning and an end. It was also often seen as something done to students, who were the passive recipients in the assessment process. Formative assessment, on the other hand, is ongoing and requires the deep involvement of the student (Barrett, 2007). Students are active participants in the assessment process as they clarify learning intentions, co-construct success criteria, monitor their progress, collect evidence of their learning, self-assess, and receive feedback to move their learning forward and determine next steps (Barrett, 2007;
Formative assessment gives educators information about instructional decisions and students information for improvement (Clark, 2010). This type of assessment supports students as they take greater responsibility for their learning. “Formative assessment promotes the goals of lifelong learning, including higher levels of student achievement, greater equity of student outcomes, and improved learning to learn skills” (OECD, 2008, p. 1).

**Self-Regulated Learning**

Self-regulated learners are individuals who are metacognitively, motivationally, and behaviourally active participants in their own learning (Zimmerman, 1989). Metacognition is a key aspect of self-regulation. It is defined as, “the awareness of and knowledge about one’s own thinking” (Zimmerman, 2002, p. 65). Planning, monitoring, and regulating are the processes that make up metacognitive self-regulated learning.

Through formative assessment, students develop metacognitive skills that will be of benefit to them throughout their lives. Students in classrooms grounded in formative assessment are continuously planning, monitoring and regulating their own learning. Zimmerman (2002) says that in these classrooms, learning is something that students do for themselves instead of a covert event that happens in response to teaching. Zimmerman states that self-regulated learners have high levels of self-motivation, set goals for their learning, and self assess. They evaluate their progress against their own goals instead of comparing their performance to that of their classmates. They attribute their progress and success to their effort and the strategies they use, instead of to their ability (Zimmerman, 2002). In her book, *Mindset* (2006), Carol Dweck explains that these types of learners have a growth mindset. They understand that no matter what their ability is, it is effort that turns it into accomplishment.

“Studies show how self-regulatory processes lead to success in school, but few teachers prepare students to learn on their own” (Zimmerman, 2002, p. 65). In order to develop these self-
regulation strategies, “students need to be involved in complex meaningful tasks, choosing the products and processes that will be evaluated, modifying tasks and assessment criteria to attain an optimal challenge, obtaining support from peers, and evaluating their own work” (Perry, 1998, p. 716). In the research done by Baas, Castelijns, Vermeulen, Martens, and Segers (2014), 528 grade four to six students were part of a case study where teachers used portfolio assessment in hopes of enhancing student motivation and self-regulated learning. The researchers were looking for a connection between formative assessment practices and the development of cognitive and metacognitive strategies. Baas and her colleagues found that providing students with a clear understanding of where they were in their learning, and discussing next steps in their learning was positively related to surface and deep learning strategy use. The use of student portfolios did enhance the use of cognitive and metacognitive strategies. The next section will look more closely at portfolio assessment, providing a definition of traditional and digital portfolios; benefits of use for students, teachers, and parents; and a discussion of implementation variables.

What is Portfolio Assessment?

Learning is messy. Multiple choice tests and quizzes cannot begin to give us a complete picture of a child’s learning. Capturing, assessing, and communicating the learning process is challenging (McLeod & Vasinda, 2009). Portfolios make it possible to capture the entire learning process, in all its complexity, in an authentic and student-centred way (Sweat-Guy & Buzzetto-More, 2007). Portfolios also help to combat the fear of only documenting things that are easy to measure instead of those things that can be harder to assess (Johannesen, 2013).

Portfolio assessment emerged in the late 1980s primarily in higher education (Barrett, 2007) and then made its way into K-12 classrooms. The ePortConsortium (2003) refers to traditional assessment measures as one-dimensional. In their white paper, they say that portfolios “are the most reflective means of expressing a broad range of a student’s total learning experience that can include
important information and artefacts that may not be considered when traditional assessment measures are applied” (Sweat-Guy & Buzzetto-More, 2007, p. 329).

Purpose defines the portfolio. Although there are different types of portfolio assessment, it is common to find samples of student work, and reflections on that work, in some format to document student learning (Barrett, 2007). We tend to see two main types of portfolio assessment: showcase portfolios and process portfolios. Showcase portfolios are often concerned with final products and are used to highlight a student’s best work (Barrett, 2007; Nicolaidou, 2013). Process portfolios, on the other hand, are purposeful and organized collections of student work used to document all aspects of a student's learning, and are not limited to final accomplishments (Barrett, 2007; Meyer et al., 2010). Learners select work to share that will show growth and change over time (Barrett, 2007). This type of portfolio supports “reflection, refinement, conferencing and other processes of self-regulation, important skills for lifelong learning and learning how to learn” (Meyer et al., p. 85). This project will focus on the latter.

Research suggests that portfolios are tools that support students in developing metacognitive skills, self-regulated learning skills, and allow them to document their learning process and knowledge of content (Kotsopoulos, Lee, Cordy & Bruyns, 2014). Many educators believe portfolio assessment allows students to become more independent and self-regulated as they take a more active role in the learning process and think critically about their work (Meyer et al., 2010). Portfolios are a place for reflection and growth and should not be treated as merely a collection of artefacts (Hicks et al., 2007). In fact, “the portfolio would be not simply a means to assess growth and reflection but a vehicle for that growth and reflection” (Yagelski, 1997, as cited in Hicks et al., 2007, p. 451). As students reflect on their learning, they better understand their strengths, areas requiring growth, and learn how to set goals for their next steps in learning (Meyer et al., 2010). Portfolio assessment adds another layer to the assessment of learning allowing us to look at the entire
learning process for each individual learner. “Portfolios are being heralded as vehicles that provide a more equitable and sensitive portrait of what students know and are able to do” (Herman & Winters, 1994 p. 48, as cited in Barrett, 2007, p. 437).

**Digital Portfolios**

Digital, or e-portfolios, are starting to be seen more in K-12 classrooms. The National Learning Infrastructure Initiative defines electronic portfolios as a collection of authentic and diverse evidence, drawn from a larger archive representing what a person or organization has learned over time, on which the person or organization has reflected, and that is designed for presentation to one or more audiences for a particular rhetorical purpose. (National Learning Infrastructure Initiative, 2004, p.22)

More simply put, the digital portfolio can be thought of as a digital or multimedia container (Kotsopoulos et al., 2014; Meyer et al., 2010; Meyer, Abrami, Wade & Scherzer, 2011; Niguidula, 2005). The portfolio can be used to store multimedia artefacts of student work including documents, pictures, video, and audio (Kotsopoulos et al., 2014; Meyer et al., 2010; Meyer et al., 2011). These artefacts, collected over time, provide evidence of student learning (Kotsopoulos et al., 2014).

Although the portfolio can be thought of as a storage device, it must be seen as more than a multimedia container. They are powerful learning tools due to their ability to organize content and support formative assessment (Johannesen, 2013; Meyer et al., 2011), self-regulation, and core competencies (Meyer et al., 2011). Through the use of digital portfolios, we gain access to evidence of higher order thinking skills, social skills, and group work that may not have been evident through more traditional assessment (Sweat-Guy & Buzzetto-More, 2007). The portfolio documents not only the achievements of learning, but also the process along the way. When students are given responsibility for their learning, portfolios become not only demonstrations of their abilities, but also platforms for self-expression (Hongzhu, 2013) and tools that help them to assess their thinking and
reflect on the learning process (Johannesen, 2013). Digital portfolios, “build on the evidence of what is already known about effective portfolio pedagogy, and make working with portfolios more engaging, dynamic, and accessible for students, teachers, and parents” (Meyer et al., 2010, p. 84). As educators move from paper to electronic portfolios, they must not lose sight of the good pedagogy of paper portfolios in exchange for flashy new tools (Barrett, 2007).

The use of technology increases student, teacher, and parent engagement in the learning process by inviting all parties into the learning conversation and by extending learning outside the walls of the classroom. Digital portfolios are promoted as tools that are designed to integrate technology into the classroom (Meyer et al., 2010). The technological aspect of digital portfolios has also been found to be motivating for students (Nicolaidou, 2013; Sweat-Guy & Buzzetto-More, 2007). As described in the work by McLeod and Vasinda (2009), motivation is an important prerequisite for learning. Providing students with choice in how they document and communicate their learning is motivating. The students who were interviewed in the McLeod and Vasinda study spoke of using their portfolios as fun. They also spoke of the power of the digital aspect of portfolios when they made comments about the public nature of sharing their work, and the creativity and choice the portfolio offered. Giannandrea and Sansoni (2011) also noted that the social aspect of digital portfolios was seen as motivating for students. In the first stage of this study, the students learned to use the social aspects of the digital portfolio platform. They were able to create groups within the class and connect with their friends. Despite challenges with technology, and limited access to computers, the students participation in the study remained high as the students moved into the second, third and final phases of the study which involved choosing artefacts to add to their portfolios, reflecting on those artefacts, and thinking about future learning.

Digital portfolios are dynamic, defined by Merriam-Webster (n.d.) as, “marked by usually continuous and productive activity or change.” Digital portfolios are flexible and can serve multiple
purposes (Hongzhu, 2013; Sweat-Guy & Buzzetto-More, 2007). The digital portfolio is not limited in the way that traditional portfolios are, making it possible to meet each learner’s needs by offering additional ways to capture and enhance learning, and giving a wide range of evidence for assessment (e.g., voice clips and video) (McLaren, 2012; McLeod & Vasinda, 2009). Another advantage to digital portfolios is that they can be maintained over time and can follow students throughout school and beyond (Barrett, 2007; Giannandrea & Sansoni, 2011; Hongzhu, 2013).

Unlike paper portfolios, digital portfolios are highly accessible. Traditional portfolios either require a visit to the classroom for viewing or the ability to make the collection manageable enough to transport. Collections of student work in traditional portfolios, especially if they are to follow students throughout their schooling, take up a large amount of storage space and are not very portable. Advances in technology have made creating digital portfolios quicker and easier than ever before (Eyal, 2012). Digital portfolios allow a broad audience, decided upon by the teacher, student, and family, to have easier, and even instant access, to a student's learning (Nicolaidou, 2013) and require no virtual storage space. Students’ digital portfolios could be created when they enter school and could document their learning journey through each grade. Another benefit to digital portfolios is that they can be accessed anytime/anywhere regardless of location or time of day. The owner can grant varying degrees of access to their work depending on the platform and settings allowing others to be a part of their learning.

**Benefits.** Portfolio assessment benefits students, teachers, and parents. The use of portfolios gives students voice in the assessment process, allows them to take more responsibility for their learning, and increases motivation and engagement. Teachers benefit from changes to practice and the improved communication portfolios make possible. Parents are able to become more engaged in their child's learning, play a part in the assessment process, and have a tool to deepen communication and gain an insight into their child's learning.
**Students.** Portfolios offer many benefits to students: allowing them to be active participants in the assessment process; giving them voice in the assessment process; developing their self-regulation skills giving them a way to take more responsibility for their learning; and increasing their motivation and engagement. These benefits for students are each reviewed below.

With portfolio assessment, students become active participants (Karzhaubayeva & Koksheeva, 2014). Assessment is not something done to a learner at the end of an assignment. Portfolios give students greater choice in how they express their learning (Sweat-Guy & Buzzetto-More, 2007). Because of their flexibility, portfolios also highlight a learner’s creativity (McLaren, 2012). As students add to their portfolios, they have to make many choices: What will they add and how (photo, video, text, audio)? Why did they choose this artefact (immediate reflection)? Who will they share it with (audience)? Where to next (goal setting)? When students have the ability to make choices they become more independent. In this way, portfolios help students to take more responsibility for their learning.

Voice is another benefit offered to students through their portfolios. Traditionally, a student would submit a piece of work and would await a mark or feedback from their teacher. Often this was as far as the assessment process would go. Once a student received their mark or grade, it was entered into the grade book and teacher and student moved on to the next assignment. With portfolio assessment, learning is ongoing and the student plays a key role. As students are able to, they should take increasing ownership of, and responsibility for their portfolios. “A portfolio that is truly a story of learning is owned by the learner, structured by the learner, and told in the learner’s own voice” (Barrett, 2007, p. 441). The multimedia capabilities of digital portfolios allow a child’s authentic voice to be heard (Barrett, 2007). A student’s voice can be heard through the artefacts they choose to include and through the written, audio, and video reflections that document their learning process.
Portfolio assessment helps students to become self-regulated learners. Digital portfolios “deepen students’ learning experiences by placing the student at the centre of his/her learning and scaffolding essential metacognitive skills, such as goal setting, identifying strategies, and reflecting on one’s learning” (Meyer et al., 2010, p.84). When using portfolios students begin to think more deeply about content and themselves as learners (McLeod & Vasinda, 2009). Students also reflect on the feedback they receive from those viewing their portfolio. One of the strengths of digital portfolios is their ability to provide students with feedback from their teachers, their peers, and their families (Nicolaidou, 2013). As students reflect on the feedback they receive, it helps them to understand the gap between their current progress and their learning goals (Baas et al., 2014). It also enhances their ability to use metacognitive strategies and optimizes their learning (Baas et al., 2014).

In the 2010 study by Meyer, Abrami, Wade, Aslan, and Deault, 14 teachers and 296 students, in grade four to six classrooms, used ePEARL, an electronic portfolio platform, in hopes of improving student literacy and self-regulation skills. The teachers integrated ePEARL into their regular classroom instruction and activities. It was found that students in classrooms considered to be medium or high implementers, demonstrated learning gains and positive changes in self regulation skills (Meyer et al., 2010). Significant results were found in the students’ self-reports in regards to goal setting, listing strategies, and using feedback to improve their work (Meyer et al., 2010). In the McLeod and Vasinda mixed design study, students in two, grade three and four classes used digital portfolios for a school year as a way to capture their learning and communicate this learning to their parents. One of the areas of interest to the researchers was whether the students would learn to reflect constructively on their work through the use of their portfolios. McLeod and Vasinda offered empirical evidence that “highly reflective learning portfolios create an environment in which students learn to reflect on themselves as a learner and on the subject matter learned” (p. 32). In another study, Giannandrea and Sansoni (2011) found that digital portfolios supported reflection in
the fifth and sixth graders they studied. They found that the particular platform they used, Mahara, enhanced the reflective attitudes of the students. Portfolios encourage students to externalize and reflect on their thinking (McLaren, 2012). A student’s ability to reflect constructively increases over time with support, guidance, and the time to practice the new skills they are learning (McLeod & Vasinda, 2009). Portfolio assessment also helps students to set goals and determine next steps in their learning process (Johannesen, 2013). Through the use of portfolio assessment the hope is that we will have students who are not only aware of their own thinking, but who also take responsibility for it (McLaren, 2012).

Another benefit to students is increased motivation as a result of the integration of technology, having an audience for their work, having choice, and the social aspect of the portfolio itself. Barrett (2007) said that technology is changing portfolio pedagogy making the process more motivating for students. In Nicolaidou’s (2013) interviews with teachers involved in the yearlong case study of fourth graders, it was noted that students were motivated by having a larger audience for their work and by the use of technology. For many students, knowing that others will be reading/viewing and responding to their work is motivating and can cause them to put more care and attention into what they are producing. Providing students with choice in how they document and communicate their learning is also motivating (McLeod & Vasinda, 2009). This personalization of learning allows students to demonstrate their learning in a way that fits them best. The social aspects of digital portfolios have also been found to be motivating (Giannandrea & Sansoni, 2011). Students can use and respond to the feedback they receive, allowing the learning process to be a conversation and social activity. Students also benefit from participating in peer assessment, learning from and with their classmates.

**Teachers.** In order for teachers to embrace digital portfolio assessment, they must become aware of the benefits, while finding ways to minimize the obstacles. The benefits include:
teaching methods; allowing for differentiation of teaching and learning; improved communication between teachers, students, and parents; and the ability to map learning outcomes to portfolio artefacts. Each of these benefits for teachers are reviewed below.

The use of portfolio assessment has the ability to impact teaching methods (Johannesen, 2013; McLaren, 2012; McLeod & Vasinda, 2009; Meyer et al., 2010). Through the implementation of portfolio assessment, teachers may explore new practices and develop pedagogies that will positively impact student learning (Johannesen, 2013; McLaren, 2012). Teachers who took part in the 2010 Meyer study reported changes in their practice in regards to monitoring student progress, modifying strategies, using students as instructional resources for each other, and developing growth mindsets. Johannesen found that the use of portfolios helped to focus both students and teachers on formative assessment. The digital portfolio supports authentic formative assessment in the classroom through its focus on process over product (McLaren, 2012). Teachers can see evidence of the entire learning process, instead of just the final product that is handed in or a test score. Documenting the entire learning process, including the students thinking and reflections, gives the teacher and students a more complete picture of learning and helps them to see growth and determine next steps. Evidence of learning and thinking can be captured in real-time for authentic assessment (McLaren, 2012). Technology also allows teachers to capture learning that they might otherwise have missed. As students used portfolios for documentation they began to think more deeply about their learning giving teachers the opportunity to gain more insight into their thinking as well (McLeod & Vasinda, 2009).

Another benefit for teachers who use digital portfolio assessment is its ability to support differentiation. In Scotland, 305 primary and secondary students took part in a twelve month study using e-scape, a digital portfolio platform (McLaren, 2012). The research focused on capturing learner performance, thinking, and creativity using innovative methods. Teachers saw the benefit of
encouraging their students to express their learning and creativity using a wide range of approaches.
The teachers responded that one of the most positive aspects of using portfolio assessment was the
potential it offered for differentiation. The teachers had the flexibility to better meet the needs of
learners of all abilities and allow them to access the curriculum.

Digital portfolios can also be used as communication tools to strengthen the home-school
connection (Johannesen, 2013; McLeod & Vasinda, 2009) and to support teacher/student,
student/student, and teacher/teacher collaboration and communication (Johannesen, 2013). As will
be discussed in the next section, parent involvement is important to student success (British
Columbia Ministry of Education, 2013a). Many families today do not have the luxury of being able
to be a part of the classroom on a regular basis (British Columbia Ministry of Education, 2013a). A
child’s portfolio gives teachers a way to communicate student learning to parents on an ongoing
basis and invites their participation (British Columbia Ministry of Education, 2013a). The portfolio
also allows the teacher and student to communicate more effectively. Many platforms offer users the
ability to leave feedback and comments that can be responded to, allowing teachers to give timely
feedback to students and giving students the opportunity to reflect and respond (Barrett, 2011).
Teachers can also put the power of peer feedback to work if they choose to give students access to
each other’s portfolios. Allowing students to give each other feedback, not only develops peer
feedback skills, but gives the owner of the portfolio additional feedback to move their learning
forward (McLaren, 2012; Nicolaidou, 2013). Finally, the digital portfolio allows teachers who share
students to work independently of time and place and make it easier for them to coordinate
assessments and work collaboratively to support student learning (Johannesen, 2013).

A final benefit is the ability to map learning outcomes to the artefacts in a student’s portfolio.
For example, with the digital portfolio platform Freshgrade (2011), teachers can attach prepopulated
learning outcomes to assignments and activities. Another example of this is using tags and categories
within a student’s blog. The teacher can very easily search for all posts, related to math for example, or any other tag used. This feature helps the teacher to document learning and makes it easy to show growth over time.

**Parents.** The digital portfolio is a powerful tool for parents as well. Some of the many benefits include: engagement in their child’s education; playing a role in the assessment process; making meaningful and ongoing communication easier; and providing them with insight into their child’s learning. In this section, I review each of these benefits as found in the literature.

Research is clear on the importance of involving parents in their child’s learning, but for many of today’s families this is challenging (McLeod & Vasinda, 2009). “The importance of parental or carer inclusion was confirmed by Townsend in 1997, who believed that effective schools were those that welcomed parents by engaging them and involving them in the widest range of school activities, most crucially those concerning their child’s development” (Clark, 2010, p. 344). Parents play a pivotal role in their child’s learning. The encouragement and support they give can have a direct effect on the quality of their child’s educational experience (British Columbia Ministry of Education, 2013a). “When schools and families work together to support learning children usually do better in school, stay in school longer, and like school more” (British Columbia Ministry of Education, 2013a, p.16).

According to Clark (2010), one of the eight key principles of formative assessment is the importance of engaging parents in the learning process. Effective dialogue and cooperation between parents, students, and teachers ensures all parties are working together to support student learning. Digital portfolios are one way that parents can be brought into the assessment process (Johannesen, 2013). Parents are able to view their child’s learning and leave them feedback just as the teacher would. Parents can also be part of discussions around student strengths, areas for growth, goal
setting, and the monitoring of progress towards goals in an authentic way due to the visibility of learning offered by the digital portfolio.

For any number of reasons, meaningful and ongoing communication may be challenging for families. Parents may not feel comfortable coming into school, there could be a language barrier, or perhaps they have schedules that make it challenging to communicate with their child’s teacher during the school day. Educators need to find a solution to communicate more deeply with parents and to provide them with a way to be active participants in their child’s education (McLeod & Vasinda, 2009). The British Columbia Ministry of Education (2013a) says that communication involving parents, teachers and students is ideal. Portfolios make this kind of communication possible. The digital portfolio can be a non-threatening way for parents to engage in their child’s learning. The digital nature of the portfolio makes it possible to use online translation tools, and makes learning accessible anytime or place that an internet connection is available. In McLeod and Vasinda’s case study, parents saw their child's digital portfolio as a communication tool and a way to connect home and school more deeply.

Parents should have easy access to information about their child's learning through a variety of means (British Columbia Ministry of Education, 2013a). The digital portfolio acts like a window into the classroom helping parents to feel included in classroom life (McLeod & Vasinda, 2009). Parents not only get to see what their child is doing at school, but they can also hear their child’s voice while they are reflecting on their work (McLeod & Vasinda, 2009). The portfolio allows parents to receive updates about their child’s learning in real-time, giving parents a better understanding of what their child is working on and how they can support them (British Columbia Ministry of Education, 2013a). Nicolaidou (2013) found that there was potential for this type of parental involvement to support learning in the classroom and extend it outside the regular school day.
Implementation variables. Change is often difficult. With the adoption of new practice, it is expected that there will be challenges along the way. In the literature reviewed, several obstacles are identified as well as suggestions to support implementation (Barrett 2007; Kotsopoulos et al., 2014; McLaren, 2012; McLeod & Vasinda 2009; Meyer et al., 2010; Meyer et al., 2011; Nicolaidou, 2013). The Meyer study in 2011 specifically looked at factors impacting teachers’ integration of new technologies and pedagogies. Learning from other’s experiences can help make future implementations more successful. Variables that need to be taken into consideration when implementing portfolio assessment include: technology, time, scale of implementation, and teacher beliefs. Each of these variables are reviewed in the following paragraphs.

Digital portfolio assessment is dependent on technology and with that comes its own set of challenges (Meyer et al., 2011). Teachers spoke of issues with software, hardware, access, and ability to get help with technical issues. The actual digital portfolio platform must be considered carefully. Different platforms can be challenging depending on their ease of use and suitability for different age groups. In the Kotsopoulos et al. study (2014), although the platform was intended for primary students use, it was found to be unsuitable. The platform was difficult to navigate, even for the adults, requiring multiple clicks for navigation and too much reading. In the McLaren study (2012), there were challenges with devices in terms of general housekeeping and management that tested some teachers’ perseverance and organisational skills. An example of providing technological support to overcome these obstacles can be found in the 2011 study by Meyer et al. Teachers in this case study could access a help feature in the software, were provided with instructional videos, and also received training and follow-up support with the digital portfolio tool. It is important to make sure there is adequate and consistent access to the technology needed, technological support when problems arise, and sufficient training for teachers and students in the use of the new technology (Kotsopoulos et al., 2014; Meyer et al., 2010; Meyer et al., 2011).
Another variable seen as a challenge was time (McLeod & Vasinda, 2009; Meyer et al., 2011). The time it takes to learn a new program, collaborate with colleagues, and manage student portfolios must be considered. It takes time to learn how to use new technology, how to integrate it successfully into your teaching practice, and how to support students in using it effectively. In a study done by Nicolaidou in 2013, the focus was on supporting primary students’ writing performance through peer feedback. Nicolaidou found that although the platform was easy for the students to learn, some students found engaging in peer feedback challenging and required extensive teacher support. If teachers are to work together on student portfolios they will require time to meet and discuss student learning. This collaboration time also supports professional growth as teachers learn with and from each other. Finally, there is the time it takes to keep up with the daily management of student portfolios. Depending on the age of the learners and how much responsibility they are given for their portfolios, it can take a considerable amount of time to add artefacts, provide feedback, and respond to comments made by students and parents. Even the parents interviewed in the McLeod and Vasinda study spoke of the concerns they had for the time involved for teachers. If digital portfolio assessment is a priority for a school or district, they must find ways to diminish concerns about time. Training can be provided through professional development or in-service, scheduling can be done creatively to include time for collaboration, and platforms can be chosen carefully to ensure they meet the needs of students and teachers without being overly complex or overwhelming.

The scale of the implementation is another variable to take into consideration. Support for the implementation and integration of digital portfolios into classroom practice can play a key role in successful implementation and can come in many forms: professional development and training, support from colleagues, and support of administration. For teachers trying to implement portfolio use on their own it can be very challenging. These teachers lack a community of practice to call on
for support, and have no one to discuss and share their experiences with (Barrett, 2007). Even when there are two teachers at a site it is challenging, because even though the teachers can support each other, it is still not a systematic experience for parents or students (Barrett, 2007). In studies over several years, Meyer and colleagues found that school-based or district-based initiatives were most successful (Meyer et. al. 2011, Meyer et al., 2010). Barrett also wrote about the importance of a school-wide approach. She stated that this type of implementation built a community of practice where teachers could share and learn from each other.

A final variable to consider is teacher belief in the change and level of motivation. In a study of 16 Canadian classrooms, Meyer and her colleagues (2011), wanted to understand how teachers used digital portfolios, to what extent they used them, and what factors influenced their use. Those teachers that were personally committed, saw pedagogical benefits to use, and who felt supported were found to integrate portfolio assessment into their teaching more consistently and regularly (Meyer et al., 2011). It was found that focussing on the why, and using testimonials, demonstrations, and collaboration, could help to support implementation (Meyer et al., 2011). The researchers also found that the level of personal investment and motivation may have been the most important factors in teachers’ decisions to persist when faced with challenges (Meyer et al., 2011).

Conclusion

The above review of literature influenced and guided the direction taken with the project that follows. It is the strong belief in formative assessment, self-regulated learning, and digital portfolios that has lead to this project. It is hoped that the blog we have created will help teachers, students, and parents to benefit from shared stories about change implementation, and specifically portfolio assessment in classrooms. As supported by the literature on scale of implementation, we decided to create a website for stories of change. It is critical that teachers can share and learn from each other if
we hope to move beyond pockets of innovation across the province and begin to support widespread change.
Chapter 3: Professional Project

In this chapter, we document the creation of the Stories of Change website and explain the choices made for content, style, and function. The purpose of this site is to provide a forum for educators to share the innovations occurring within their classrooms, schools, and districts. The website also contains background information on the topics of digital portfolios, making student thinking visible, and communicating student learning, as well as, links to helpful resources.

We made the decision to create a website and find a way to host it in Canada in order to adhere to the Freedom of Information and Protection of Privacy Act (FOIPPA). Through HostPapa we were able to purchase a domain name, set up a Wordpress blog, and ensure all content would be stored in Canada. The theme, widgets, page structure, and plug-ins were chosen to maximize functionality and visual appeal. The figures in this chapter are screen captures of the pages found at storiesofchange.ca. The accompanying annotations explain the rationale for the content on this site.

In the following sections of this chapter, we describe the content of our website. The website is organized under the following headings: Home, About, Background, Resources, Contact Us, and Submit Your Story. Under the Background tab, you will find sections entitled: digital portfolios, making student thinking visible, and communicating student learning. These sections and their accompanying subsections provide visitors with information. Although they are meant to be static resources, updates will be made as needed. Within the digital portfolio section you will find information organized under the headings: benefits, platforms, purpose, and supporting change. Within the making student thinking visible section you will find information organized under the headings: capturing thinking, pedagogical documentation, and thinking routines. Under the Resources tab you will find sections entitled: pro D, professional reads, and websites.
Home

Figure 1 shows a sample blog post which represents the innovative stories which may be shared by educators on this website. Because this is the home page, the content will change to highlight the most recent blog post and comments by contributors.

Figure 1. Sample blog post from home page.
Figure 1 (continued). Sample blog post from home page.
Figure 1 (continued). Sample blog post from home page.

http://storiesofchange.ca
About

Figure 2 shows the context for the creation of this website and a brief overview of the content. This page was also created to invite visitors to share stories of their own.

Figure 2. Content of About page.
http://storiesofchange.ca/index.php/about/
Background

Figure 3 shows the page which is an access point for the background information on this website. Although this is a static page, we will revisit it occasionally and update it as necessary. In the following sections, we share each of the elements of the background page and their subsections.

Figure 3. Content of background landing page.
http://storiesofchange.ca/index.php/background/
Digital portfolios. Figure 4 shows the information provided on the website about digital portfolio assessment and gives a rationale for the use of digital portfolios in the classroom.

Figure 4. Digital Portfolios page under Background section.
Benefits. Figure 5 shows the benefits of digital portfolio assessment. We broke this down to include information about the benefits for parents, students, and teachers. For more information refer to the study done by McLeod and Vasinda in 2009, which explores the perspectives of these stakeholders.

Figure 5. Benefits page under Digital Portfolios under Background section.
Voice is another benefit offered to students through their portfolios. With portfolio assessment, learning is ongoing and the student plays a key role. As students are able to, they should take increasing ownership of, and responsibility for their portfolios. The multimedia capabilities of digital portfolios allow a child’s authentic voice to be heard. A student’s voice can be heard through the artefacts they choose to include and through the written, audio, and video reflections that document their learning process.

Portfolio assessment helps students to become self-regulated learners. When using portfolios students begin to think more deeply about content and themselves as learners. Students also reflect on the feedback they receive from those viewing their portfolio. As students reflect on the feedback, they receive it helps them to understand the gap between their current progress and their learning goals. It also enhances their ability to use metacognitive strategies and optimizes their learning.

Technology is changing the way we use portfolio assessment, making the process more motivating for students. For many students, knowing that others will be reading/viewing and responding to their work is motivating and can cause them to put more care and attention into what they are producing. Providing students with choice in how they document and communicate their learning is also motivating. This personalization of learning allows students to demonstrate their learning in a way that fits them best. Students can use and respond to the feedback they receive, allowing the learning process to be a conversation and social activity. Students also benefit from participating in peer assessment, learning from and with their classmates.

Improved literacy is another benefit of portfolio assessment. As students develop habits of practice around communicating their learning, their literacy skills will be called upon to narrate a story of their own thinking and learning path.

*Figure 5.* Benefits page under Digital Portfolios under Background section.
Teachers

Benefits to teachers include:

- impacts teaching methods
- allows for differentiation of teaching and learning
- improved communication between teachers, students, and parents
- ability to map learning outcomes to portfolio artefacts

In order for teachers to embrace digital portfolio assessment, they must become aware of the benefits, while finding ways to minimize the obstacles. Through the implementation of portfolio assessment teachers may explore new practices and develop pedagogies that will positively impact student learning. The digital portfolio supports authentic formative assessment in the classroom through its focus on process over product. Documenting the entire learning process, including the students thinking and reflections, gives the teacher and students a more complete picture of learning and helps them to see growth and determine next steps.

Another benefit for teachers who use digital portfolio assessment is its ability to support differentiation. Encouraging students to use a wide variety of innovative approaches gives teachers the flexibility to better meet the needs of learners of all abilities and allow them to access the curriculum.

Digital portfolios can also be used as communication tools to strengthen the home-school connection and to support teacher/student, student/student, and teacher/teacher collaboration and communication. Many families today do not have the luxury of being able to be a part of the classroom on a regular basis. A child's portfolio gives teachers a way to communicate student learning on an ongoing basis to parents and invites their participation. The portfolio also allows the teacher and student to communicate more effectively. The digital portfolio also allows teachers who share students to work independently of time and place and make it easier for them to coordinate assessments and work collaboratively to support student learning.

Figure 5. Benefits page under Digital Portfolios under Background section.
Platforms. Figure 6 shows our analysis, created in the form of a Tackk (Tackk Inc., 2015), an online presentation tool, of common digital portfolio platforms. We included information about age/grade suitability, purpose, the learning artefacts supported, and the pros and cons for each platform. Live links and video tutorials can also be found on this page.

Figure 6. Platforms page under Digital Portfolios under Background section.
Figure 6 (continued). Platforms page under Digital Portfolios under Background section.
Figure 6 (continued). Platforms page under Digital Portfolios under Background section.
Figure 6 (continued). Platforms page under Digital Portfolios under Background section.
**Figure 6 (continued).** Platforms page under Digital Portfolios under Background section.  

**Thinglink**

**Age/Grade:** K-12 - younger students will need support

**Purpose:** Students and teachers can create a digital portfolio using a series of Thinglinks (interactive images) curated in a channel.

**Learning Artifacts Supported:** videos, photos (interactive), live links to documents, text

**Pros and Cons:**
- free
- turns images into interactive graphics with multiple hotspots
- using Thinglink channel allows use of Thinglink interactive images to be grouped together in a portfolio
- all users can create thinglink channels, but only premium users can publish them
- free iOS and android app
- can comment with mobile app with no wifi
- add tags with text or media for reflection
- can be embedded into blog, website or 3rd party tool
- considerations - use a mobile device
Purpose. Figure 7 shows three common types of digital portfolios and explains their different uses. Barrett explores the multiple purposes for digital portfolios more thoroughly in her 2007 article.

Figure 7. Purpose page under Digital Portfolios under Background section.  
**Supporting change.** Figure 8 shows an explanation of the variables that need to be considered when implementing portfolio assessment in order to support change. This is consistent with the work of Meyer, Abrami, Wade, and Scherzer (2011) on the factors that impact the integration of new technologies and pedagogies.

**Figure 8.** Supporting Change page under Digital Portfolios under Background section.
require time to meet and discuss student learning. This collaboration time also supports professional growth as teachers learn with and from each other. Finally, there is the time it takes to add artefacts, provide feedback, and respond to comments made by students and parents. Training can be provided through professional development or in-service, scheduling can be done creatively to include time for collaboration, and platforms can be chosen carefully to ensure they meet the needs of students and teachers without being overly complex or overwhelming.

For teachers trying to implement portfolio use on their own it can be very challenging. These teachers lack a community of practice to call on for support, and have no one to discuss and share their experiences with. Research has found that school-based or district-based initiatives are most successful. This type of implementation builds a community of practice where teachers can share and learn from each other.

A final variable to consider is teacher belief in the change and level of motivation. When teachers are personally committed, see pedagogical benefits to use, and feel supported portfolio assessment is integrated into their teaching more consistently and regularly. Focussing on the why, and using testimonials, demonstrations, and collaboration, can help to support implementation. The level of personal investment and motivation are important factors in teachers’ decisions to persist when faced with challenges.

Figure 8 (continued). Supporting Change page under Digital Portfolios under Background section. http://storiesofchange.ca/index.php/background/digital-portfolio-assessment/supporting-change/
**Making student thinking visible.** Figure 9 shows the rationale for the learning approach of making student thinking visible. This aligns with the work of Ritchhart, Church, and Morrison (2011), which supports the idea of creating opportunities and routines for students to make their thinking visible.

*Figure 9. Making Student Thinking Visible page under Background section.*

http://storiesofchange.ca/index.php/background/visible-thinking/
Capturing thinking. Figure 10 shows the links between using digital tools and digital portfolio assessment to capture students’ thinking.

Figure 10. Capturing Thinking page under Making Student Thinking Visible page under Background section.
Pedagogical documentation. Figure 11 shows the rationale for documenting student learning. Krechevesky, Rivard, and Burton (2009) cite this more thoroughly in their work which explores the role and purpose of observation, documentation, and reflection in a classroom setting.

Figure 11. Pedagogical Documentation page under Making Student Thinking Visible page under Background section. http://storiesofchange.ca/index.php/background/visible-thinking/pedagogical-documentation/
**Thinking routines.** Figure 12 shows an online resource (Curkovic, 2012) and infographic (Tolisano, 2013), which are shared to outline and detail the common thinking routines.

*Figure 12.* Thinking Routines page under Making Student Thinking Visible page under Background section.
Figure 12 (continued). Thinking Routines page under Making Student Thinking Visible page under Background section.
Figure 12 (continued). Thinking Routines page under Making Student Thinking Visible page under Background section.

http://storiesofchange.ca/index.php/background/visible-thinking/thinking-routines/
Communicating student learning. Figure 13 shows the need for innovative practice around communicating student learning, and makes reference to the links found in the resources section.

Figure 13. Communicating Student Learning page under Background section. http://storiesofchange.ca/index.php/background/communicating-student-learning/
Resources

Figure 14 shows the page which is an access point for the resources found on this website. Although this is a static page, we will revisit it occasionally and update it as necessary. In the following sections, we share each of the elements of the Resources page. Resources included fall under the categories of: Pro D, professional reads, and websites and articles.

![Image of the Resources landing page]

Figure 14. Content of Resources landing page.
http://storiesofchange.ca/index.php/resources/
**Pro D.** Figure 15 shows professional development opportunities in the area of innovative assessment practices. This page will be updated regularly as we receive new information.

**Figure 15.** Pro D page under Resources section.  
http://storiesofchange.ca/index.php/resources/prod/
**Professional reads.** Figure 16 shows professional reads including online articles, texts, and online books supporting the philosophy of this website. As visitors to the site make suggestions for this type of resource, they will be added to this section.

![Stories of Change](image)

**Professional Reads**

**Digital Portfolio Assessment**


**Making Student Thinking Visible**

*Visible Learners: Promoting Reggio-Inspired Approaches in All Schools.* Based on the Reggio Emilia approach to learning, *Visible Learners* highlights learning through interpreting objects and artifacts, group learning, and documentation to make students' learning evident to teachers. Visible classrooms are committed to five key principles: that learning is purposeful, social, emotional, empowering, and representational. The book includes visual essays, key practices, classroom and examples.

*Making Thinking Visible: How to Promote Engagement, Understanding, and Independence for All Learners.* Visible Thinking is a research-based approach to teaching thinking, begun at Harvard's Project Zero, that develops students' thinking dispositions, while at the same time deepening their understanding of the topics they study.

*Figure 16. Professional Reads page under Resources section.*
Visible thinking Resource Book This is an online classroom resource guide explaining all the thinking routines, created by the Harvard Graduate School. In addition to the routines available in Making Thinking Visible, others have been included from their website.

Communicating Student Learning

Student Authored Portfolios: Archiving Learning with iPad is a multi-touch book available in iTunes (free).

This book highlights how Kathy Cassidy's primary students archive their work to create digital portfolios. Kathy is a primary teacher in Moose Jaw, Saskatchewan.

Figure 16 (continued). Professional Reads page under Resources section. http://storiesofchange.ca/index.php/resources/professional-reads/
Websites. Figure 17 shows links to websites supporting the philosophy of this website. As new resources are suggested or discovered, they will be added to list of links.

**Websites**

- Digital Portfolio Assessment
  - ePortfolios are AWESOME!
- Digital Portfolios: The Art of Reflection
- Making Student Thinking Visible
  - Visible Thinking
- Cultures of Thinking Resources
- Making Learning Visible: Documenting, and Supporting Individual and Group Learning

**Communicating Student Learning**

- **SD 42-Maple Ridge/Pit Meadows Schools**
  - Instead of writing traditional report cards, parents, teachers, and students meet for a reporting conference to discuss student learning and create learning goals for the next term. Portfolios are used to document student growth over time.
  - [http://schools.sd42.ca/sd42reporting/](http://schools.sd42.ca/sd42reporting/)

- **SD 71 Comox Valley**
  - A group of teachers and administrators in the Comox Valley are rethinking the way they communicate student learning. Digital portfolios are being used as a way to provide parents with snapshots and summaries of their child's learning.
  - [https://portal.sd71.bc.ca/class/sfbaco6/Pages/default.aspx](https://portal.sd71.bc.ca/class/sfbaco6/Pages/default.aspx)

- **SD 83-Sorrento Elementary School**
  - Sorrento Elementary has replaced traditional report cards with active digital portfolios.
  - [https://technolandy.files.wordpress.com/2014/03/ecs-to-eps.png](https://technolandy.files.wordpress.com/2014/03/ecs-to-eps.png)
  - [https://technolandy.wordpress.com/eportfolios/](https://technolandy.wordpress.com/eportfolios/)

*Figure 17. Websites page under Resources section.*

Contact Us

Figure 18 shows a Contact Us page which encourages readers to contribute resources, links or any other information they think should be added to the website. The nature of this project is to support open communication and sharing between educators through an online forum.

Figure 18. Contact Us fillable form.
http://storiesofchange.ca/index.php/resources/websites/
Submit Your Story

Figure 19 shows the plug-in which enables other educators to share stories of innovation in their classrooms. This page sets the guidelines for these stories and invites authors to have a voice in this collaborative project.

Figure 19. Submit Your Story fillable form for blog post submissions.
http://storiesofchange.ca/index.php/submit-your-own-story/
**Conclusion**

In this chapter, we documented the creation of storiesofchange.ca, and described the content of the website. Screen captures were included for each page as well as annotations to explain the rationale for their inclusion. These annotations also outlined the design structure and organization of the website.

We envision this website functioning as both a forum for educators to share their stories of innovation, and as a resource for those seeking to make similar changes. Contributors will be identified through our personal learning networks, as well as through the open invitation on our website. Storiesofchange.ca will be an ongoing curation project. We will maintain curator status for content and story submissions, but in time the intention is to include additional administrators.
Chapter 4: Discussion of the Project

Summary of the Project

The Stories of Change blog is a website created by myself, and fellow Master of Education student Jane Rees, as our capstone project. This website will be a place for educators to share and read about stories of innovation taking place in classrooms, schools, and districts in our province and beyond. It will also act as a resource for those seeking to learn more about assessment. Jane and I included background information on the topics of digital portfolio assessment, making student thinking visible, and communicating student learning. This information was taken from our work on these topics throughout our Master of Education program. Those visiting the site will also find a resource section which includes professional development opportunities, professional reads, and links to websites which may useful. The heart of the project and website is the sharing of our learning as professionals. An open invitation to share stories of change is found in the about section and is made possible through a plug-in which allows visitors to become guest authors on the blog. Educators also have the opportunity to participate by leaving comments on posts or by using the Contact Us page to share information which could then be added to the blog.

It is hoped, by both Jane and I, that the Stories of Change blog will become much more than our final Masters project. We hope that it will be a meaningful contribution to the work of those seeking to transform education. Ideally, it will become a space where innovations are shared, conversations are started, and resources can be curated. We hope that it will help educators to connect with others, find support, and be encouraged to take risks and make their learning visible.

This project has become more than I first envisioned, thanks to the opportunity to collaborate with Jane. Two heads truly are better than one and the final product is something we are both invested in and proud of. Valerie Irvine suggested that we might work together on a project due to the similarities in our interests and literature reviews. Although there are many benefits to working
with a partner, there can be challenges involved as well. The most significant of these was the fact that Jane and I were separated by nearly 500 kilometres. Technology allowed Jane and I to overcome this challenge easily. We were able to share ideas, support one another, and keep each other focused and on track. There was a great give-and-take to our style of collaboration. We pushed ourselves outside of our comfort zones, but also knew when to seek out help from others when some of the tech challenges became overwhelming.

Through this project, I grew in my ability to work collaboratively and also gained technological knowledge and skills I did not have previously. The need to find hosting for our blog in Canada necessitated the learning of the technical aspects of setting up a Wordpress blog. My previous blogging ventures had only required the choosing of a theme and the adding of widgets. Jane and I were faced with learning some of the coding that normally happens under the hood and out of sight. We learned to go into the WordPress files and make changes to the code in order to make our blog work for this project and to enable different features and plug-ins. Although this was frustrating at times, the sense of accomplishment was well worth the effort.

The resulting blog, storiesofchange.ca, is the culmination of the work we have done the past two years. It reflects what we have learned in our coursework, the research we have done, and the knowledge we have gained through the connections we have made with others. As we make our learning more visible, we hope others will be encouraged to do the same.

**Professional Beliefs and Educational Philosophy (MEd Journey)**

"I did then what I knew how to do. Now that I know better, I do better."

~Maya Angelou

The idea of beginning this Master of Education program was overwhelming. I never thought I would return to university to pursue further coursework on this scale. I felt fulfilled working with my students each day. What began as a requirement for my new position as an administrator, has become
something I am very thankful for having been a part of. The work was challenging, but meaningful.
While I have been pushed out of my comfort zone, I feel excited and motivated about what lies ahead. Perhaps it takes this feeling of discomfort, to provoke big changes and growth.

Through coursework and my own research, I have gained a great deal of knowledge around technology and innovation, personalized learning, formative assessment, self-regulated learning, and portfolio assessment. The literature review allowed me to explore the work done by researchers in the field and further explore changes in the Ministry of Education’s philosophy and direction for educational change. Working with professors, colleagues in my cohort, and other educators that we were introduced to along the way, broadened my understanding and further expanded my personal learning network. Another result of this journey has been the improvement of my academic skills. I have learned how to access, search for, analyze and synthesize current research, and have improved my writing and presentation skills. This has helped me to gain confidence and endeavor to make my learning visible and share with others.

As a professional educator, I have always sought out ways to improve my practice. One of the things I love most about being a teacher is that I am always learning. As we learn more, we do better. This Master of Education journey has enabled me to immerse myself in professional learning for the last two and a half years. Throughout this experience, I have been challenged to rethink my philosophies and beliefs, and to grow as an educator. I have grown in my understanding of myself and of the students I teach.

With the changes being made in the education system, and the vast amount of research being added to our understanding of student learning, we cannot simply continue to teach the way we taught. We must continually examine the choices we are making and have an inquiry mindset. We must ask ourselves, “Why?” and seek out ways to best meet the needs of each learner.
Although I was interested in assessment and communicating student learning before beginning this journey, my interest has now become a passion. I have a deeper understanding of how we can better use assessment practices to document learning, set goals, monitor progress, reflect, and communicate learning. I know how important it is for students, parents, and teachers to work together to improve student learning and to play an active role in the assessment process. Digital portfolios in particular, can be used to provide a meaningful way to support student learning, motivate and engage all parties, provide valuable insights into a child’s learning, and communicate that learning in a regular and ongoing way. The digital portfolio allows its users to focus on mastery learning and growth which are important goals in a personalized, student-centred learning environment. The asking of “Why?” has helped me to reexamine how I have been using portfolio assessment with my students and look to make improvements.

**Professional Implications**

My graduate experience is already affecting my professional career. I bring the things I have learned to my classroom as a teacher, the school as principal, the district through my place on the administrative team, and beyond our borders through our project and the sharing of my learning with others.

In my classroom, I will continue to work to improve my assessment practices and the way I communicate student learning. I will work with my students and their families to further refine the way we are using digital portfolios to best meet their needs. Feedback from my students and their families is an important part of the changes I will make. After all, we are all learning together.

As a principal, I will continue to work with the staff as we journey to improve these practices as a school as well. Each term we have spent time reflecting on our current reporting format and have made changes to improve the process. We are currently exploring ways to use portfolio assessment in a more authentic and ongoing way for all learners in the school. As a principal, it is my
job to lead and to support the calculated risk taking of the educators I work alongside. I want to have a school culture based on an inquiry mindset where we are constantly examining our practice and its effects on our students. I want us to ask tough questions, challenge our beliefs, and share openly.

As a member of the district team, I will continue to share openly and learn from the other administrators in our district. This position gives me an opportunity to be part of change on a larger scale. Although we are a small, fairly remote district I believe that we are making big and exciting changes. We have the support needed to make calculated risks and push traditional boundaries. We are encouraged to do what is best for our learners and communities as long as it is based on sound pedagogy and will improve student learning. We are expected to ask the tough questions and take action. I hope that the work our school has done around assessment and communicating student learning may be useful to others who may be seeking to implement similar changes. I also hope that others in my district will take risks and share some of the amazing things happening in their classrooms and schools on our blog.

Hopefully other educators beyond our districts will embrace our project. We hope that storiesofchange.ca will help to build and support a community of educators looking to make changes and connect with others. If we want our students to take risks and share their learning, then we as leaders and learners ourselves, need to do the same. Real change happens when someone is willing to share.

**Recommendations**

The following points are recommendations for educators who may be interested in using digital portfolios with their students:

1. Do Your Homework

   Before choosing a digital portfolio platform to use with your students be sure to explore the many different options available to educators. With the growing interest in portfolio assessment,
there seems to be an abundance of platforms to choose from, and even more being developed and released as I write these recommendations.

Jane and I included a section on storiesofchange.ca dedicated to platforms, but we only chose a few of the most common ones to review. It is not possible to say which platform is the best because we all have different needs. Some are better suited for younger students and some are more customizable to engage older learners. You will find differences such as, the media files they support, cost, support, ease of use, etc.

The best advice I can offer, when considering these choices, is to reach out to others who are using digital portfolios with their students. I have found that educators are more than willing to share their experiences and samples of their student portfolios. They have a wealth of information about the pros and cons of their choice, and even information about other platforms they may have used in the past. Furthermore, there is even a hashtag on Twitter dedicated to portfolio assessment, #eportfolio.

Once you have found a platform that you are interested in, it is a good idea to make a test portfolio so that you can try out its features before introducing it to students and their parents. Many platforms offer step-by-step tutorials to walk you through set-up and daily use. Some also offer online training sessions on a regular basis for new users or those wishing to learn more.

2. Have a Support Network

Having a support network in place includes having fellow educators to collaborate with, the necessary infrastructure in place, and the support of your school community.

Research has shown that the implementation of digital portfolio assessment is most successful when done as a school-based or district initiative (Meyer et. al. 2011; Meyer et al., 2010). This provides the teacher with a community of practice for support and to share with (Barrett, 2007). Being able to share your successes with colleagues can be motivating and having someone to help
you troubleshoot when you are having difficulty can help you to work through challenges and persevere. There is also the aspect of accountability in having someone else to check in with regularly.

Having a support network also includes making sure that the necessary infrastructure is in place and that technology support will be available when needed. Some questions you may ask yourself include:

- How will students access their portfolios?
- Will you have a sufficient number of computers or devices to allow uploads to be handled smoothly?
- Is your internet connection reliable?
- What is your school district policy regarding privacy?
- Is tech support available with the platform I have chosen?
- Are others using the same platform that I can call on for support if I run into trouble?

Finally, assuring that you have the support of your school district, administrator, and families is very important. Before introducing portfolio assessment to your students, it is important to have done your research. You should discuss your plans with your administrator and district, if necessary. The next step is to communicate with parents. You should be able to explain to parents why you will be using portfolio assessment and elaborate on the benefits to student learning. The more information and support you can provide parents with the more likely they will be active participants in their child’s portfolio and learning. All parties should know that this is a learning process for everyone involved and that you value their feedback about what is working well and what may need more work.
3. Make Your Learning Visible

The final recommendation is not specific to portfolio assessment. It is a challenge to take a risk and be open with your professional learning. Educators have a tendency to work in isolation in their classrooms. There are amazing things happening in classrooms throughout this province and beyond, and it is important that we share with one another. We do not know what someone else may connect with or find meaningful.

Making your learning visible will allow you to make connections with other educators around the world. You can share successes that someone else may find motivating, seek out help from someone experiencing a similar challenge, or make connections based on similar interests. Using the power of social media and the internet, help may only be a tweet or blog post comment away.

We need to flatten our classroom walls and erase our school district borders. As educators, sharing our learning can only make us all stronger, improving learning for all students.
References


