Integrating a Technology Enriched Curriculum

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Dedication

I dedicate this journey of reflection to my fiancé, friends, and family, whom have been my love and support throughout. I give a special thanks to my sister, whom has taking the time to mentor me.

Abstract

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This project is a personal journey of a schoolteacher and tech mentor that considers the questions of: (1) How can schools create/implement a technology-rich environment?
(2) Can a community of practice including the assistance of a Technology Mentor help lead the change in successful technology integration in schools? (3) Are there, context factors, practices of an exemplary technology teacher that will provide an in-depth understanding of quintessential teaching practices that lead to a technology enriched- curriculum? (4) How can everyone in the school community change and grow? The educator/mentor is reflecting on lived experiences in elementary and junior high schools that were implementing new emerging trends and technologies in Edmonton Catholic Schools. Reflections and research on these lived experiences along with literature referring to successful implementation of technology across Canada has helped the author obtain and in-depth view of the common themes identified.

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Chapter One

The Evolution of Technology in My Lifetime

Excitement fills my body when the latest technology comes out to the public; I am thrilled to explore its capabilities and uses. Notably, I've always loved computers, gaming systems and anything that would be considered a gadget. The transformation of technology and educational technology specifically has come a long way, since I've been in school.

As an elementary student, computing was a rare activity. Technological tools consisted of erasable pens, projectors, chalkboards, and felt boards. It was not until upper elementary that a computer in school was available, which came along with floppy discs. My first experience with an educational gamming system was playing Oregon Trail where I watched an Ox slowly make its way across the screen. The computer lab was available for daily use for typing practices. It was not until upper elementary that we started to use it for research, presentations, and projects. There was net nanny's on everything, which made a lot of information inaccessible.

Similarly to the school technology was the technology in the home, a computer was available and dialup was the process used to connect to the Internet. If there was any available research online, it was basic and only possible once the phone line was free. Hearing the dial tone boot up was tedious, life proceeded at a donkeys pace as I waited for the internet to boot up. The fear of someone picking up the phone and disconnecting you was a constant reality.

Shortly after this, technology started to gradually improve in schools. As a student in Junior High school I was fortunate to have wonderful experiences with new emerging technologies. My school had two computer labs and a tech consultant that came once a week to work with a group of students. He taught the group how to use the computer as a resource and as an additional learning tool. There was a steady increase in use of technology. Projectors replaced overheads, Netscape was created, and not to mention the evolution of gaming systems

and music formats.

By the time I had reached High school we had computer labs, iPods, scientific calculators, and some mobile devices such as laptops and cell phones. Once again we used these tools as a way of producing our work. Technology used for creating and inventing was not a known skill to my classmates and I yet.

The next chapter of my technology journey was as a University student, in which I had access to numerous tools such as Mac computers, laptops, iPhones, email, and social networking sites/ blogs. I took a few summer courses that taught me how to teach a subject on strictly computers. I had one mandatory technology class where we studied the parts of the computer and some computer software programs. However, I did not have access to other educational devices that were currently present in schools in the surrounding area such as the smart board and iPad. As the education department did not have money for these tools seeing as they had a cafeteria as old as the university itself.

Despite all of my experiences with technology as a student, I felt ill prepared to immerse myself in it in my very own classroom. In my first year teaching I was working in a junior kindergarten program known as 100 Voices in the morning, grade two and Technology Mentor in the afternoon. In my 100 Voices class I had had students that spent their first few months or years of their life at the Glenrose Hospital. Additionally, I had about 18 “coded” kids and eight neighborhood children. The needs were vast and great and the numbers were twice the size as what I had come accustomed to as I had previously worked in a preschool class with three adults and 14 children. It was a very difficult first two years were I was stretched thin and my faith and ability as a teacher were tested. I knew little about the technology in my school and had taken upon myself to teach myself as much as I could in all the “free time that I had.” It started to get better as I discovered different assistive technology in the classroom. My first and favorite

experience was with a child who had been diagnosed with Cerebral Palsy, Autism, and being selectively mute, he started to talk and play with other students after a year of being in the program. What motivated him were finding things he knew about on Google maps like our school and sharing it with the class. He loved an app called puppet pals where you make puppets move and record your voice. Lastly, he started talking to the cat on the ipad and loved that it mimicked his own voice. It was then that I started to realize that it is possible to bridge some of the gaps that the education system lacks through technology.

Significance

Moreover, in my past six years as an educator I have seen new emerging trends come and go. Some stick, some are renamed, and some dissipate as the world changes around us. One constant evolving trend is Technology and its purpose in education. Every day there are new tools, new websites, and new apps. It is growing faster than we could have ever imagined. But what is not changing or is slowing adapting is how teachers are taught to use it. I walk into elementary classrooms that look like the spitting image of my classroom when I was in elementary 16 years ago. I can't help but wonder why? As a student that completed their undergrad and now graduate school I cannot tell you how helpful and beneficial technology has been for me. Which is why it boggles my mind that students are still using pen and pencil, especially in English class? Why do they have to write out there essays and stories six times? What a waste of time when you can use assistive technologies. Students can make quick changes without having to rewrite and write neatly. My biggest issue came when I saw the diverse needs of the classroom. In my past role as an elementary school teacher, having had worked in a diverse demographic, I struggled to meet the needs of the every child let alone the whole child. I have often felt that there is only one of me and so little time to develop student learning. I felt that the social and emotional needs of the child where not being met due to time constraints, lack

of adequate space, and lack of individual support.

In my current role as a junior high English teacher, we have a high population of English Language Learners and I am seeing similar struggles. I am the English teacher for junior high students in an International Bachelorette Program (IB), The Program offers a comprehensive and balanced curricula that are aligned with the Alberta Education curriculum. With IB it requires students to take a certain amount of minutes for Language Arts and French earlier on. It is very difficult to assist, support, and differentiated for those students while planning for rich in depth inquiry based learning. My beginning answers to my problem have been with imbedding technology into the school and classrooms. I truly believe that it is the missing link we have been waiting for. I believe success for all students will become a possibility. Why not give students tools they need for success? Based on past experiences I have found that If students are visual impaired give them a device that they can record their voice and command with their own voice. If they have slight vision impairments why not give them a device that can magnify and change contrast and brightness? If they are not at grade level for reading why not give them a device that can read to them and assess them orally. The teacher and students' lives will be made easier and better with technology at our fingertips.

As my role as tech mentor (A role in the Edmonton Catholic District that gives each school a 0.1 FTE of a teacher, that facilitates the teachers in implementing emerging technologies) I have been passionate about integrating different technologies into my teaching practices as well as my colleagues. As a tech mentor teacher I saw all the possibilities, but faced all of the trials and tribulations that go along with it. Through my experience as tech mentor I realized that there are many factors effecting successful technology implementation. You need money, time, support, PD, hands on learning and collaboration. The biggest issues I saw were that teachers were given little technology to work with so they did not use it. Or the opposite,

they were given a lot of technology that they were not told about and were required to use it. I Witnessed teachers who were not given choices when it came to the tools. I saw that they were just handed the tools and their own learning was not being scaffold. The tools were not what they deemed appropriate for their students or classroom. In a teachers world where personal time is a luxury throwing a new tool their way or jamming technology down their throat is not the answer. How can a teacher who has personal life obligations such as family, work, coaching, and volunteering have time to change their teaching pedagogy with regards to implementing technology into their classroom over a short period of time. This has left me searching for answers on how we can be successful in doing this.

Proposed Problem

Technology is ubiquitous, it is consistently changing and adapting. Unfortunately, I have experienced a lot of resistance from colleagues when it comes to implementing technology into their practices and classrooms. This is often due to their beliefs and lack of guidance. Teacher Ohler (2005) vision of technology as a metaphor explains the issue,

"A fog…

Technology is a fog. It covers its inventions so that when one gets close to them, they are seen clearly. But the pathways leading to them are cloudy, sometimes completely concealed. (Like the)… automobile. I see it clearly and use it well, but if something were "pinging" under the hood, I'd have no idea how to get the sound to stop. …This fog causes me to move carefully, unsure of where the next step will take me, hiding the "big picture." I want someone else to see through the fog and find my best path." This expresses the challenge that teachers are facing when integrating technology. This is why teachers need support to become successful in overcoming their challenges. This has influence my essential question for this paper. My wondering is,

How can schools create/implement a technology-rich environment?

Can a community of practice including the assistance of a Technology Mentor help lead the change in successful technology integration in schools? Are there, context factors, practices of an exemplary technology teacher that will provide an in-depth understanding of quintessential teaching practices that lead to a technology enriched- curriculum?

This has led me to the following inquiries;

What practices work best?

How can everyone in the school community change and grow?

What about contextual factors affecting the whole school community?

What happens if the mentor or technology leader leaves a school?

Will anything stick and be sustained?

How does a school successfully create a technology rich environment?

How can I use this information to help lead my role as Tech Mentor?

Theoretical Framework

The purpose of this paper will be using my findings to make a model that uses community of practice, tech mentor, and instructional leadership to support the integration and creation of a technology enriched environment in schools. Information, support and strategies for technology integration are necessary at the provincial, district, and school levels. Although providing schools with a model resource is only part of the piece to success, ongoing professional development using a model and strategies would provide a lot of teachers and schools with opportunities to transform their practice and learning environment.

My aim is to change the way teachers view technology and will hopefully spark their interest in transforming their own practices when implementing technology in their classrooms. Through the analyzing the literature I hope to expose best strategies, methods, and models. I am

looking for strategies that will assist me in transforming the way teachers use technology in their classroom at my school. I am secondly, possibly looking at how to support Technology use in the district. My hope would to be able to make a difference in students' lives, teachers, and to help change a currently challenging system.

In the following chapter, I will provide an overview of effective teaching practices to get a solid understanding of pedagogy and exemplary teaching. Following is a review of the definition of educational technology and a Technology Mentor. Subsections continue on to present how educational technology has been viewed and recommendations to integration into classroom instruction. These subsections are comprised of the following topics: (1) technology integration, (2) the benefits of a mentorship program, (3) overlooked challenges in Technology Mentorship Programs, and (4) effective programs/ methods and strategies/ models of mentoring programs. Concluding the literature review is showing what research reveals establishing learning communities to support change and how teachers can be instructional technology leaders leading change.

Chapter Two - Literature Review

Introduction

In education we are forever changing, transforming, and evolving. There are many new emerging trends. Technology being one of those trends is constantly developing, and the integration of technology in schools is currently valued greatly among the public and educational community. The impact and benefits of the role of technology in classroom is a current and debatable topic. Currently, the research varies; school districts divaricate from other districts, and teachers' pedagogy used to implement technology in their classroom differs. Along with all of these new changes many schools have chosen to adopt different methods to support the change such as learning communities, a newer mentor role to help facilitate the change, and teachers as

technological instructional leaders. Integrating technology into the classroom and creating a technology-enriched curriculum is a difficult process for teachers, in which they need support. Despite the fact that mentoring programs have been effective in assisting teachers with beginning teachers in general (Lancaster, 2006), a review of literature regarding mentoring programs for technology education teachers indicates, that there is limited research showing the effects and further research is needed. Most importantly, there is limited research covering the development of teacher practices and integrating technology successfully. This Literature Review examines effective teaching practices illuminating pedagogy and exemplary teaching. Secondly, is a review of educational technology and the Technology Mentor Role at present day? Continuing on to show how educational technology has been observed and recommendations to integration into classroom instruction. These subsections are comprised of the following topics; (1) integration in a changing system, (2) the benefits of a Tech Mentorship program, (3) overlooked challenges in Technology Mentorship Programs, and (4) effective programs/ methods and strategies/ models of mentoring programs. Concluding the literature review is showing what research reveals about context factors affecting members of the school community's use of technology and how learning communities involving tech mentors can promote transformation and how teachers as instructional technology leaders can support change.

Exemplar Teacher Strategies and Pedagogies

What makes an effective teacher? Studies show that teacher preparation and knowledge of teaching and learning, content knowledge, experience, and the teacher qualification standards made by the province are all components in exemplary teachers. However, Stronge (2002) suggests that discovering and pointing out these factors is a complex task as teaching is a variegated job. Depending on where a teacher resides, Stronge (2002) has found that some researchers describe effective teachers as those who have high student achievement, whereas

others determine effective teachers through ratings from their supervisors. Despite all of these findings one must note, that examining effective teachers must come from a variety of stakeholders such as students, administers, and the school community and possible district. A further way researchers have investigated this was by looking at model teachers and observing their process and pedagogy.

In Alberta specifically there is a shift and transformation with content standards. This shift in curriculum is not only looking at improving student motivation and achievement. It is looking at improving and changing teaching pedagogy. A major shift is 21st century learning looking at integrating technology in the classroom to assist in having an enriched curriculum. It is evident, that an effective teacher evolves and transforms as the content standards and curriculum change. Moreover, Alberta Educations policy directions state that, "educators understand the profound impact that contemporary technologies have on how students learn, and are skilled in teaching in face-to-face, online, and other non-traditional environments administrators create dynamic, digital learning cultures which maximize the use of media-rich resources to create relevant and engaging learning experiences," (2010, p. 5). Similarly, Shelly, Cashman, Gunter, & Gunter, (1999) believe that effective teachers should use the appropriate technologies to improve learning and should be knowledgeable of the right times in which to do it. There is a common theme that an effective teacher evolves as education changes. Moreover, Januszewski & Molenda, (2008) note that an effective teacher was once thought as a teacher who could manage their students well, and the role of teacher as director is now being replaced, by teacher as designer and facilitator of their students' learning. Lastly, Loughran (2013) suggests that expert teachers have strong Pedagogical Content Knowledge and a key part of being able to do that is the action of teachers developing and transforming their content through collaboration.

In summary, an effective teacher involves many aspects and numerous stakeholders. In

congruence to an effective teacher in the 21st century they need to be able to adapt their practices and environment to meet the learning needs of their students at present day.

Educational Technology

Traditionally, educational technology was viewed as the effective use of technological tools in learning. However, as technology evolves so has the way it is being used in the classroom. Although it is important to note that Steinke and Putnam (2007) found that a common issue when integrating technology into the education system is when teachers or administrators misunderstand what specifically educational technology entails. According to The Association for Educational Communications and Technology (AECT), a professional association made up of educators and related professionals who work towards improving instruction through technology, it is defined as the following, "Educational technology is the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources." (Januszewski & Molenda, 2008). AECT explains that there is less emphasis on technology as a tool, but more as study and practice. Notably, it also explains how the purpose of educational technology is to facilitate the learning and enhance performance. Continuing on, AECT explains how we use technology by creating, using, and managing. Lastly, AECT explains that a portion of the definition of educational technology is what we work with in educational technology. This is technology as a process and resource.

Similarly, Alberta Educations Learning and Technology Policy Framework explains educational technology through the following vision, "If we are to shape the future of education and not have it shaped for us, we must become more purposeful in our approach to technology. We need to understand what may be emerging, its implications, and how it can be used for education. Ultimately, the power of technology should be harnessed to support innovation and

discovery, not simply to aid teaching. We need to engage learners to use these new technologies as designers and creators of knowledge." (2013, p.14). They continue to explain technology as a process that encompasses an entire framework. In Alberta specifically, it is not seen as just a tool or resource.

Integration and a Changing System

Emerging trends and implementing new practices or educational tools is nothing new. In fact, there is always something evolving when it comes to education. However, the way we integrate or implement change has been changing progressively. Attention to leadership and instructional leadership in schools specifically in the last decade has been changing immensely. (Alberta Education, 1996)). This being partly due to the fact that the educational system has gone through and is currently going through a lot of change in emergent trends, integration of new technologies, and changes in curriculum in Alberta's government. (Alberta Education, 1996). This is accompanied by a need to evaluate the effectiveness of various expenditures. This review of the literature makes a clear case for a shared role in instructional leadership in integrating technology between principals, teachers, and individual school communities. This means the development in building a team of instructional leadership is prevalent and it will take time to develop these new roles. Supporting this is Alberta Educations Alberta School Leadership Framework, "A collective 'ownership' of education is promoted by school leaders by building the leadership capacity of all members of the school community and engaging them through opportunities to be meaningful involved in decision-making, to develop shared values, beliefs and vision, and to help create an effective learning culture for all." (2010, p. 4). Alberta Education (2006) and Jackson (2002) believe to have effective schools, strong leaders need to collectively collaborate with the school boards, teachers, coaches, and school community in order to create environments conducive to the effective use of technology.

A big reason to head into a shared instructional leadership is due to the need for sustainability in the education system. Due to the constant transformation of our educational system it is not possible for the principal to be solely responsible for the successes of his student body. Implementing the integration of technology should not be the principals' responsibility alone. Bringing in change with technology should not be a dictatorship by a principal. This claim is supported by Fullans' statement, "Like the business leader, the principal of the future—the Cultural Change Principal—must be attuned to the big picture, a sophisticated conceptual thinker who transforms the organization through people and teams" (2001, p. 8). He believes that five essential components characterize leaders in the knowledge society: moral purpose, an understanding of the change process, the ability to improve relationships, knowledge creation and sharing, and coherence making. Most importantly, he believes that principals must treat students, teachers, parents, and others in the school well. Additionally, he notes that they must work to develop other leaders in the school to prepare the school to sustain and continue to achieve success when he or she leaves. Furthermore, he makes the argument that, "if school leaders do not concern themselves with the development of the social and moral environment of the entire district (in addition to the development of the environment within their own school), then not only will the school system deteriorate, but eventually their own school will also fail," (p. 10).

In agreement is Darling-Hammond (1995), as she suggests that principals cannot be the sole leader of the school and they must provide a variety of ways in which students and parents can actively be involved in school climate, culture, and learning opportunities.

Lastly, research has found that there is more success with integration when connecting the school environment to the home and or community. Barth (2001), Irvin (2004), and Hallinger and Murphy (1987), stress the importance of the home environment being an important factor by

serving as a resource and support system that molds a child's attitudes and beliefs about learning. If we want children to adopt new practices and change the way they learn with technology they need to be supported in the home. If students are doing work on computers or mobile devices they need to have access to these educational tools at home as well.

It is important to understand the process and dynamics of integrating something new in the education system. Notably, research is proving to find that this process has moved from a hierarchy of a few powerful people towards a shared role to ensure success and sustainability over time.

What is a Technology Mentor?

There are currently different perceptions in the education system of what the role of a Technology Mentor or exemplary technology teacher is. Jackson (2002) states, it is essential that teachers collaborate and support each other through the process of mentorship. In every school there are teachers who are eager adopters with technology, or those who are less adamant of using it for fear of taking risks in the classroom. The early adapters are a great resource to their colleagues as mentors.

Moreover Hertz (2011) expresses that; a mentor is an intelligent individual who provides support, motivation, and encouragement to their colleagues. Hertz (2011) explained The following roles necessary for a mentor to have; an individual must be an expert in their skills they will be sharing, they must lead by modeling practices through their previous experiences, and by hands on learning of observing and providing feedback. Most importantly, they offer solutions to challenges occurring in colleagues' classrooms.

Why have A Technology Mentorship Program?

The evidence in the research shows that there are numerous benefits to having mentoring programs in schools. There are several common factors in the research; mentorship leads to

highly effective professional development, it brings about the cohesion of technology, coaching, and learning communities, and it assists in the sustainability of continuous success and achievement of everyone in that learning environment.

More importantly, Loughran (2013) believes a mentorship approach allows educators to teach more than just an outcome and assists with the understanding of student learning, connecting essential concepts of the lesson and providing insight into higher order thinking to be applied to new contexts.

Thompson, Schmidt, and Davis (2003), concluded that, Mentorship programs allows for the possibility to be a driving force for educational renewal in both teacher education and schools. This approach allows teachers to create and explore technology applications relevant to their curricular needs and produces benefits for everyone involved.

In Wilson and Woolrichs' (2014) study of collegial coaching of technology integration, they support the idea that coaching improves instructional effectiveness. Moreover, teachers in their study claimed to be more confident, empowered, knowledgeable, and comfortable in using technology. As a result, they were influential in assisting and motivating their collogues to change their instruction. In this study there was a continuous expression that participants responded to this approach of professional development as opposed to traditional 'sit down' workshop method. Similarly, in studies of mentorship through collaboration they found that novice teachers learned how to solve problems through modeling and coaching (Glazer, Hannafin, and Song, 2005). They also went further into explaining that once novices observed models complete a particular process they were able to complete their task independently and help scaffold a fellow colleagues process.

In conclusion, a technology mentor is very important in education today. A common theme found across the literature was that a tech mentor creates a district level of respect among

the individuals being coached in which they assist others. Thus, making it into a very effective learning environment for everyone involved.

Overlooked Challenges With the Tech Mentor Role and Technology Integration

Research has found that providing a mentor or a program to assist in the process of integrating technology is not enough. Steinke and Putnam (2007); found that the old way of simply assigning one expert teacher the mentoring role is not effective. Moreover, they must be instructed on how to teach adults and their peers. Furthermore, Steinke and Putnam addressed three influential factors challenging mentor teachers. They stated that technology education teachers are agitated by the amount of time needed to ensure a quality program, the low ranking or priority of technology education, and the fact that among administration and or colleagues most often than not there is a lack of understanding of what technology education actually is and what it entails.

Additionally, Steinke and Putnam (2007) concluded that districts often overlook the lab-based nature of technology programs or professional development, the lack of funds available for the essential equipment, and the importance for mentors to have similar backgrounds and technical expertise in relation to education. These are all key components needed for review when creating an educational mentor framework.

Similarly, Thompson, Schmidt, and Davis (2003), claimed that teachers expressed there was a lack of time to learn about new technologies, a limited number of faculty technologically training opportunities, and there was an academic reward system that did not provide incentives for technology innovations.

Likewise, in Krells' study of coaches facilitating learning through inquiry, he found schools often forget to facilitate the learning of the mentor themselves. They are often given the role and expected to help everyone they work with little or no guidance. Coaches in Krells' study

indicated that they were challenge by time and not having a plan or method to follow made them less efficient in their role as a mentor.

Kolk (2008), explained that School Districts need to look at the big picture, plan for change, and be realistic about the time frames that that may take. Kolk (2008), indicates that the implementation process must begin before software is purchased, installed, and used with students. Notably, the notion that people will readily adapt to something that is newly emerging and available is unrealistic. People are often afraid of change. Technology pushes teachers to rethink their practice and transform it, which can be very challenging and time consuming.

Context Factors Affecting Schools' Use of Technology Money

Kopcha (2008) explained that money is a consistent factor and issue among school districts and the reality of integrating technology is that it can be costly. Not only do devices cost money you need to look at there shelf life, quality, and trust that the users will be responsible with it. You also need to look at time and money spent on training teachers. Kopcha (2008) indicated that integration of technology programs have been criticized because they place too high of a demand on school resources such as time, money, and teacher support.

Likewise, Whitfields (2005) states, "funding the positions and devices will be, of course, the major stumbling block," (p.15). He believes that high demand for assisting teachers in imbedding technology into their practice is evident and teachers urgent needs for timely onsite training and technical support is ongoing. Technology Mentors and School Leaders are in agreement with these needs for more support.

Time

According to Seels, Campbell, and Talsma, (2003), most often technology coordinators have little experience in classrooms and are understaffed. Thus, making it extremely unrealistic in providing just in time support making it almost impossible to help integrate technology or to

introduce new emerging technologies. They also noted that following a workshop provided by the coordinator it was difficult to provide the time for follow up to help the teachers really learn the skills needed for implementation and discovery.

Moursund and Bielefeldt (1999) believe that technology integration does not effectively change practice and we must remember that technology is a tool used by a human being to accomplish a task and it is how and why we use it that is important. Moursund and Bielefeldt stated, "416 colleges and schools of education, results indicated that few programs are adequately preparing pre-service teachers to use technology, and that future research in this area should concentrate on identifying, studying, and disseminating examples of effective technology integration in teacher education programs," (1999, p. 30). They note that universities should be taking the time and money to properly train pre-service teachers and districts should be taking the time to train beginner teachers.

Lancaster (2006) believes that many districts are lacking plans when implementing technology. Lancaster notes, a plan is essential when implementing technology and technological education into schools. They need to know where they are coming from, why they are doing, what they want accomplished, and how they are going to administer it. They must know their stance as well as what the literature states about current best practice. Lancaster continues to explain that a school must be flexible and provided one on one support and more importantly a school must understand all of the contextual challenges or barriers that arise and in order to do that you need to look at the previous beliefs and ideals of everyone involved in order to move forward. And from there you can develop your plan and scaffold the learning of others. Lancaster believes that taking the time to develop a plan and taking the time to develop the process of integration is of most importance.

In conclusion, a majority of the research stated that a lack of a shared vision, plan, time,

and money where all key contextual factors negatively effecting technology integration.

Effective Programs/ Methods and Strategies/ Models Of Mentoring Programs

As a result of my research, I have concluded that creating an effective mentoring program for technology education is a complex task with many factors involved. There are several methods and frameworks used to implement a mentorship program in schools. However, there were not as many specifically targeting how to prepare for a technological education mentor in schools it is important to differentiate between the two. There is a lack of research about Integrating Technology Mentor Programs and further research is needed surrounding the topic.

As stated by (Cochran-Smith & Lytle, 2009) Action research (also known as teacher inquiry) is widely recognized as a powerful tool for professional development and teacher preparation. It involves teachers systematically and intentionally studying their practices (Dana & Yendol-Hoppey, 2009) and results have shown that it is effective in improving teacher practice, teacher professionalism that leads to positive educational change, in which it expands the knowledge base for teaching and provides opportunity for teachers' opinions in educational transformation (Carr & Kemmis, 2006). Cochran-Smith and Lytle (2009) noted that many mentorship programs were created using action based research. Researchers have also used observations to study technology integration practices through many contexts, including at state (Dawson, 2012) and international levels in which the study examined the technology integration practices of teachers involved in a statewide initiative via one cycle of action research. It differs from other studies of teacher technology integration practices because it involves and provides direct benefits to teachers and researchers. Coats (2005), explains Mentors follow four of the following steps; initial question or inquiry, plan, action and data collection, and reflect. Mentors would take new trends or best practices and bring it to their staff, collaborate with them, make a

plan for change, carryout the plan, document it, and reflect on it, and then share with their colleagues. This proves to be helpful in small group environments. However, it is important to note that this would be difficult to carry out when working with multiple people. This would also be a very tedious and time-consuming process to go through every time there was a new innovation in technology.

According to Steinke and Putnam's (2007), there is currently no research addressing the overall effectiveness of mentoring programs or the development of a mentoring program (model) for technology education teachers. Furthermore, they state, "School districts need a process for developing a mentoring program that is adjustable and allows for situational variability," (2007, p. 46). One such program they suggested was the situational mentoring framework (SMF). This framework consists of four factors; mentor selection, mentor and novice teacher preparation, support team, and accountability. The four factors are cyclical in nature and the approach allows changes and is flexible with new processes, people, and new technological devices. This process involves carefully selecting your mentors and carefully picking in which whom they are working with. Then within your pairing the people collaborate with each other, then the mentor teacher and novice teacher are trained in relationship skills. Along with this, the mentor has an entire support team made up of various people and resources for the purpose of assisting the mentor. Lastly, a systematic means usually in the form of a benchmark is used to monitor successes and then helps determine what needs to be kept, changed, or dismissed when mentoring. In conclusion, all four factors are essential in having long-term success for everyone. In comparison to other research found most districts or schools have a plan or method, but they do not create benchmarks or indicators that will address the effectiveness of the plan.

In addition, with evaluating plans, Streinke and Putnam (2007) indicated the importance for teachers and mentors to hold themselves accountable and to review what methods they are

using to ensure its effectiveness. They state “Within technology education, the accountability component can provide an opportunity for both experienced and novice teachers to reflect make improvements to enhance student learning,” (p. 40). Moreover, they believe that technology is constantly changing, and it is particularly important for technology education teachers to review their teaching methods and determine new ways to implement the change with technology.

In accordance to Kolk 2014, in order for effective integration to occur, there must be sustained professional development and support. More importantly, her state decision to authorize funds to support one Instructional Technology Resource Teacher (ITRT) for every 1,000 students and a technology support staff member to maintain the technology, so that the ITRT position could focus on changing instruction, her district came up with essential factors attributing to the success of this new role. Kolk indicated the following crucial components needed in a tech mentor; they must have the ability to; work collaboratively with individual teachers or groups of teachers to integrate technology into instruction, assisting with curriculum and content development, facilitate technology-related professional development for school staff, asses levels of teacher and student technology use and skills, model effective instructional strategies using technology, support implementation of the division and state technology plan, research use of newer technologies in instruction, use data to design technology-based instructional strategies, recommend hardware, software, and related resources, and identify trends in software, curriculum, teaching strategies, and other educational areas. She noted that having a full time person dedicated to all of these aspects made the program a success as well as having someone maintain the technology so that the mentor could work strictly with educating and helping people.

In summary, several of the following key factors were essential in the various frameworks; it starts with the selection for the ‘right fit’ for the mentor job, the mentor is

properly trained, it is a collaborative effort among multiple parties, it must be flexible and cyclical in nature, everyone must be held accountable. Thus, creating a community of practice or learning community is key.

What is a community of practice?

The term community of practice first came from theorists Jean Lave and Etienne Wenger in 1991 (Wenger, 2007). They believed that learning involved a process of individuals. Wenger defines the term as, "Communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly," (2007, p. 1). In the past until present day, people see a community of practice as a way to manage and promote knowledge, and in relation to teaching it is often used to improve or transform ones own practice. Notably, there are many ways people use communities of practice as it has been shown to be a successful way to go through the process of change.

Why is it Important to Establish Learning Communities to Support Change?

According to the research found, what makes a school successful is one where all leaders work together to secure community support and footprints of the school student progress and vision is present throughout the community. All stakeholders have a positive and collaborative relationship in which the partnership benefits both parties. A successful school is one that is constantly transforming and everyone is an active learner. Teacher leaders willingly meet, collaborate, and learn and grow with one another. Most importantly, the whole school community shares a vision and holds similar yet high expectation for achievement of everyone in the building.

According to Glazer, Hannafin, & Song (2005), effective technology implementation requires teachers to have contextual and meaningful experiences in order for them to act, reflect, and modify their teaching. They believe a teacher learns best in collaboration in a community in

order to receive just in time support and on going support. They state that the Collaborative Apprenticeship, a professional development model, featuring reciprocal interactions is the method to assist in technology integration. This model is an approach where technological experience teachers mentor collogues' application of technology. The main objective is to improve instruction. Technology is adapted as teachers learn to create high order thinking lessons rich with technology through the process of modeling, collaboration, and coaching. This approach is situated in a community of practice in which promotes reciprocal interactions. The peer teacher receives in time training that is continuous and the engagement is equal between both parties. Successful implementation of the model in a K-5 school setting, requires several implementations on criteria: (a) shared time; (b) teacher commitment; (c) teacher experience; (d) structure; and (e) teacher learning and development, Shared time (e.g., a common planning time) provides opportunities for teachers to share ideas and work collaboratively (Glazer, Hannafin, and Song, 2005). Their concluding summary of this approach was that administrative support, leadership, teacher participation were dependent upon the success and sustainability of the method. They believed it to be worth the time and effort and stated, "it proved to be modest by comparison given the limited success of existing approaches and the stakes involved in promoting effective technology integration," (Glazer, Hannafin, and Song, 2005, p. 63). Similarly to other mentor approaches this model relies heavily on mutual efforts and cooperation of both parties involved. This is a key feature in any mentorship program. However, there are also times where certain parties involved do not wish to put in equal efforts and that is where the mentor needs to be prepared to build those relationship skills in order to improve education for everyone especially the students.

According to Apple Classrooms of Tomorrow (1999), it is essential to have a community of learners that is made up of mentor teachers, faculty, integration experts, and content area

specialists provides the best opportunities for pre-service teachers and for K–12 students to learn in environments that include technology in relevant and innovative ways. Additionally, they concluded that research shows that technology implementation in classrooms integrated by teachers working together produced higher levels of learning and students were more likely to be successful in becoming creators and inventors.

Kopcha (2008) presents a system based mentoring model of technology integration. There are four specific stages used. The model describes how to assist the mentor with getting through the barriers of time, beliefs, access, professional development and culture. This model relates to a teacher led community or practice and it addresses the creation of a culture of technology integration, creating leaders, and using models to demonstrate technology use. The four main stages consist of the following; initial setup, teacher preparation, curricular focus, and community of practice. First the mentor determines an initial need or goal for a particular group or individual, and then a clear vision for technology use is determined which helps teachers with their expectations and purpose. They get prepared to use the technology often through peer modeling. Then once they have the basics they evaluate, refine, and remove systems. The teachers will create student lead lessons and reflect in small communities of practice. This may be a weekly team meeting used to assist in integrating technology that aligns with teachers' pedagogical beliefs. Following, the mentor trains teachers to be leaders in technology for the school. They are removing themselves as experts and having teachers use each other and resources inside of the school independently. Here the mentors trouble shoot. Lastly, the mentor must evaluate progress so they know what worked and what didn't. This will let them know if the teachers are ready to move on. This model is not linear it works in mini cycles and connects throughout the process. Kopcha concludes that implementing this model takes time, patience, and a commitment. However, he states, "doing so is an essential step towards substantiating the

use of technology to enhance learning and achieving the vision of technology integration," (2008, p.187). This model is very concise yet flexible. There are so many interrelated components that need to be constantly done that it would be essential to have a full time person in each school to ensure success. It is important to note how this program successfully fades out the mentor. The whole process fosters independents and sustainability, which is important. In educational leadership the key feature is the process you are leading must be able to be administered without you being there for a prolonged amount of time and majority of the people involved are in agreement with the process.

Additionally, Barth (2001) first describes a good school as a place that centers on being a community of learners that consists of students and adults engaging in the learning process together. Secondly, Barth explains that a good school is comprised of students and administrators sharing responsibilities for decisions that affect everyone in the school. Hallinger and Murphy (1987) have found similar conclusions and argue that effective schools are basically no more than effective communities sharing social norms and values about the teaching and learning process. John (1991) believes that due to this notion, it is the principal's main job to foster community.

It is important to understand the dynamics involved in the Tech Mentor Role. In order to be successful in assisting in the transformation of their colleagues' practice and school community they will need to take several actions. In relation, Cochran-Smith and Lytle, highlight the potential for transforming teaching, leading, learning, and research comes not only from achieving symmetry in power and knowledge in relationships, but also from recognizing that many researchers are themselves practitioners. They will need to build positive relations with colleagues and administration so that they are comfortable in accepting support through

dialogue, mediation, shared expertise, and resources. They need to develop a non-authoritative relationship so that they will provide insight into changing their colleagues practice. Secondly, coaches in Krell's study found that they were challenge by time and having a model to follow made them more efficient in their role. Lastly, based on Cochran -Smith and Lytle statement that theory of action not just about [the] individual, but rather about collectivities-pairs, groups within or across schools in which practitioners work together and/or with other colleagues and stakeholders to improve the cultures of practice, enhance students' learning …and bring about educational and social change," (2009, p.121). Tech Mentors will need to create a community of practice that will meet several times to support the process and to take all perceptions into account.

With having a Technology facilitator working with and collaborating with the teachers a school begins to build a culture of collaboration. In congruence, Cofino (2014) states, "successful collaboration with one classroom teacher begins to create a ripple effect among other teachers at the grade level or division allowing other teachers to see how one of their colleagues has utilized technology effectively in their classroom, by sharing the results of quality collaboration more teachers may become interested, spreading the effects far and wide throughout the school, helping move the entire school community forward," (p.1). This opens the doors to connect, communicate, and create on a global scale.

How can Teachers be Instructional Technology Leaders leading the Change?

Some challenges principals have faced were; being perplexed by how to successfully implement technology into their school and if they were not the experts who is? As previously stated in the past the principal was known as the manager in charge of the teachers and in charge of instruction. With the ever-changing role of technology not every principal can be an expert on purchasing technology and embedding it into teachers' practices. It is important to note that

teachers can be and or are instructional leaders in their schools. Smylie (1992) notes, the principal facilitates individuals and shared efforts to achieve a common goal and it is up to the teachers to collaborate. Teachers have been acting as instructional leaders for years as they are guiding and facilitating the learning of their students and sharing their expertise with their colleagues. However, in order to have a quality of teaching and learning, teachers need to have access to time and they need support in being able to recognize their leadership capabilities. Irvin (2004), suggests that teachers and administrators most importantly need to build a partnership. Irvin has come up with these steps to allow for successful teacher leadership to take place; Teachers need to provide support amongst each other to engage in peer coaching, support, listen, and learn from staff and students, and teachers need assistance in understanding their own learning style.

How do you choose a Tech Mentor or Instructional Leader? (Lelsie, 1991; Marks & Printy, 2003) stress that it is imperative that teacher leaders possess specific attributes and strong collaborative consulting skills to be successful and efficient in the classroom and when teaching other teachers. They believe that is the responsibility for the principal to point out and facilitate those teachers that possess these characteristic and expertise.

Additionally, Marks and Printy (2003), express the fact that teachers accept innovation and change as part of their profession, and they appreciate the ability to teach as they see fit. Although they accept feedback and vision in how they teach by their principal and colleagues. Marks (2003) reminds principals that teachers are capable of being instructional leaders, that they are ready to transform their schools, and that they want to improve their practice.

Similarly, Barth (2001) and Darling-Hammond (1995), view teachers as capable yet accountable for their own achievements as instructional leaders in their school community. They believe that teachers must become investors in their school community as they see gaps in school

improvement that teacher leaders need to fill. They find that teachers must verbalize what changes need to happen for the profession and for the public. First and foremost, teachers know exactly what needs to happen in their school specifically and only when they decide to take a shared role in instructional leadership for their whole school versus just for their classroom then we will see real improvement and sustainable success. All of these aspects are important when integrating technology or tech mentor role in schools. It is essential that teachers want to be involved and share their knowledge through instructional leadership. It should not just be the tech mentors role. (Fullan, 2002).

Conclusion

Technology is forever changing and it can have profound impacts for teaching and learning. The absolute goal for a school that is integrating technology should be to help the student be successful. Based on the literature findings it was apparent that Professional competency is the key to successful integrating a technology-enriched curriculum, as teachers need to learn how to use educational technology in their classroom in a way that fits with their student's needs and program of study. This cannot be done without effective training through learning communities, Tech Mentors, and teachers as instructional leaders. All of this is imperative, seeing as technology is a valued tool for teachers because it is a relevant and important element in the lives of students and technology skills will continue to be essential as students enter the 21st century job market, (Lancaster 2006).

As a result of my research, I intend to develop a model that uses community of practice, tech mentor, and instructional leadership to support the integration and creation of a technology enriched environment.

Chapter Three

Implementing Technology Issue

Can a community of practice including the assistance of a technology mentor facilitate the change in successful technology integration in schools? Are there contextual factors, practices of an exemplary technology teacher that will provide an in-depth understanding of quintessential teaching practices that lead to a technology enriched- curriculum?

As Kelk (2008) noted, this area is of growing concern considering the rise of use and application of technology in our schools, as this is a current issue that requires immediate attention. We are witnessing a change; many schools are going wireless, and getting one-to-one devices. According to Alberta Education (1996), 21st century learning skills include a tech-literacy piece that suggests "teachers need to be computer literate and confident in the use and application of technology to improve effective instruction," (p. 3). Moreover, students today need to develop expertise with a wide range of digital literacy skills and strategies to create, connect, and communicate understanding in a variety of contexts. For example, students communicate and or learn through blogs, wikis, webinars, websites, podcasts, and more (Alberta Education, 1996). Which is why it is essential for teachers to be trained in these competencies consistently improving their knowledge and skills, shedding light on the need to start preparing students for the 21st century immediately. Moreover, Kopcha (2008) believes teachers are especially struggling with multiple factors being presented to them at a rapid pace when it comes to integrating technology, which proves that this is an imperative issue that must be given attention and support that is crucially needed.

Rationale

In accordance with this problem, my role as a technology mentor has given me perspective on this emerging trend and the issues that come along with it. My role was

introduced into my school district five years ago. As noted in the literary review, due to the newness of this position, there are many questions or locations of inquiry around how to be effective in this role. My professional growth has led me to explore this issue and share my findings. Furthermore, it has assisted me in proposing to make a model that uses community of practice, tech mentor, and instructional leadership to support the integration and creation of a technology enriched environment in schools.

I am passionate about developing a plan to transform fellow colleagues' practices. As stated in my review of the literature, information, support, and strategies for technology integration are necessary at the provincial, district, and school levels. The model I propose in this capstone, while an important component, represents a piece of an overall strategy that would ultimately provide schools, administration and teachers the opportunity to transform policy, process and practice in order to meet the needs of technology integration in a 21st century learning environment. Most importantly, the proposed model aims at meeting the mandated requirements set out by Alberta Ministry of Education.

Indirect Affect on Class and Students

Although providing schools with a model resource is only part of the piece to success, ongoing professional development using a model and strategies would provide a lot of teachers and schools with opportunities to transform their practice and learning environment. Students need to be given the skills to assist with their future endeavors and we need to be able to provide an adequate learning environment for them, one in which everyone can successfully and comfortably use technology. Integrating technology requires more than learning basic ICT skills. To be effective and lasting, the successful integration of technology must be based on sound pedagogy. The principles of learning for teachers and students are varied. Active participation of the student is essential as individuals learn differently and at varied rates, and learning requires

independent and group processes. Therefore, it is critical to create learning environments based on these aspects when working towards achieving a technology-enriched environment. That is why it is imperative for students, teachers and school communities to follow frameworks that includes mentoring, community of practice and shared leadership. This will truly enhance the relationship of teaching and learning (BC Ministry of Education, 2001).

There is a wealth of research regarding mentoring of pre-service teachers, however, when it comes to mentoring programs for tech education, there is limited research showing the effects on students. Consequently, further research and exploration in this area is required (Steinke & Putnam, 2007). Specifically, there is a lack of research covering the development of a mentoring program (model) for technology education teachers (Lancaster, 2006). My proposed plan focuses on the varied aspects of technology education that are overlooked within mentoring programs, and the methods/ strategies for developing and integrating mentoring programs within technology education in schools.

Framework for moving forward to transform teaching learning leading and school

I believe that both socially and politically, it is important to deliberate what is required, as well as why and whose interests are being served before it is decided how to approach these requirements. I am in agreement with Cochrane, Lytle and Smith's (2009) claim that "working from and with an inquiry as stance, then, involves a continual process of making current arrangements problematic; questioning the way knowledge and practice are constructed, evaluated, and used; and assuming that part of the work of practitioners individually and collectively is to participate in education and social change." (p. 121). I believe that teachers function both as educators and learners as they go through the process of improving their practices. Moreover, it is my hope that, professional development fosters situated learning in that teachers want to adapt and or modify their practices because of the multiple perspectives given

when participating in communities of practice. In congruency Glazer, Hannafin, and Song (2005), through collaboration in a community of teacher learners, teachers learn best as they receive immediate support and feedback that is on-going. In addition, this approach allows for reciprocal interactions, which assist the teachers in learning and creating higher order thinking lessons that include various technologies. Similarly, Kopcha (2008) supports teacher led communities of practice that incorporate the creation of a culture of technology integration, building leaders, and using models to demonstrate technology use.

Furthermore, as stated previous in the literary review, Barth (2001) and Hallinger and Murphy (1987) believe that effective communities comprised of students, teachers, and administrators sharing responsibilities, decisions, and values about the teaching and learning process is imperative for success and growth. This supports my claim that school practices will successfully change when they integrate community of practices into their learning environment for teachers, along with instructional leadership and mentor roles.

Implications/ Action plan

It is important to note that technology integration methods and frameworks from the previous literature review shared commonalities. Thus, focusing on effective instruction for teachers who are actively changing their practice to incorporate technology. Based on the evidence found in my research, an effective mentoring program not only can enhance the abilities of teachers, but it also can have a significant impact on overall retention of teachers (Wilson & Woolrichs, 2014). The just-in-time support and the authentic contexts mentorship programs provide, takes technology from an assisting tool and opens it up to the more complex and substantial uses of technology for learning (Kopcha, 2010). All of the methods and strategies I have viewed in the literature have potential to help assist educators in administrating and create

positive change for educational technology mentorship programs. For my proposed plan I have chosen to select similar successes from each study and use their strategies or steps in my plan.

Articles	Summary of Components	Accountability
Steinke and Putnam's 2007 situational mentoring framework (SMF).	Four factors; mentor selection, mentor and novice teacher preparation, support team, and accountability. Factors are cyclical in nature and the approach allows flexibility with processes, people, and new technological devices. This process involves carefully selecting your mentors and whom they are working with. ship skills. Mentor has an entire support team made up.	A benchmark is used to monitor successes and then helps determine what needs to be kept, changed, or dismissed.
Glazer, Hannafin, & Song (2005)	a) shared time; **(b)** teacher commitment; (c) teacher experience; **(d)** structure; and (e) teacher learning and development, Shared time (e.g., a common planning time) This approach is situated in a community of practice in which promotes reciprocal interactions. The peer teacher receives in time training that is continuous and the engagement is equal between both parties.	Administrative support, leadership, teacher participation were dependent upon the success and sustainability of the method. Teachers to have contextual and meaningful experiences followed by action, reflection, and modification of practice.
Kolk 2014	Mentor will work collaboratively with individual teachers or groups to integrate technology into instruction. Assist with curriculum and content development. Facilitate technology-related professional development for school staff, recommend hardware, software, and related resources, and identify trends in software, curriculum, teaching strategies, and other educational areas.	Mentor will asses levels of teacher and student technology use and skills. Research use of newer technologies in instruction, use data to design technology-based instructional strategies.
Kopcha 2008	The four main stages -initial setup, teacher preparation, curricular focus, and community of practice. Mentor determines an initial need or goal for a particular group or individual,	Mentor evaluates progress to check what worked and what didn't. All stakeholders evaluate, refine, and remove systems.

	and then a clear vision for technology use is determined. Teachers get prepared to use the technology often through peer modeling

Figure 1. Successful Frameworks

Proposed Plan

My proposed tech integration mentorship plan involves the following key 10 steps:

1. School District or school specifically must make a **Technology Integration Plan** that involves realistic expectations involving time, money, and resources needed. A program best begins with an understanding of the district's vision of how to support teaching and learning. Once this vision is clear, then districts and schools can identify the steps that are necessary to achieve the vision
2. **Instructional Leadership must be shared** by the administration, Tech Mentor, lead teachers, with input from all stakeholders.
3. A School needs a **full time Tech Mentor** allocated and a part time maintenance technology technician. These are distinctly separate roles and they cannot be combined.
4. A **Technological Mentor must be selected properly**. They should have both the expertise and background knowledge in technology along with skills needed to mentor and build relationships. Communicating regularly with mentee teachers about their progress, needs, and the difficulties they face, are continuous responsibilities of the mentor.
5. **Tech Mentors must be trained** before they go out into the field and made aware of their expectations by a team of experts. They must understand how to scaffold teachers learning.
6. **Team** – that team of experts has to be available for assistance to the mentor and give ongoing training as technology is constantly evolving.

7. **Reciprocal Interactions** Mentor and participants must mutually engage in changing and adapting their practice. Appendix D provides a sample outline for meetings with mentees.
8. Tech mentor must **create a community of practice and a school culture** in which fosters technological integration.
9. Teachers and Tech Mentors must be given **adequate time to transform** their pedagogy.
10. **Accountability** of all parties through self-assessment and action plans. Please see appendixes E and F

School Structure and Administration Functions

What works for one school does not work for all schools; no two schools inside a School District are alike. That is why it is essential that Districts plan out their visions, but that schools tailor that vision to meet their needs of their school culture (Fullan, 2002). Likewise, The BC Ministry (1996), supports this claim when referring to integration of technology. More specifically, it states "the group that collectively plans their destination BEFORE getting on the plane will happily arrive with plenty of fuel and resourcefulness, fully prepared to enjoy the new place of their choice," (p. 15).

Similarly, Streinke and Putnam (2007) indicated the importance for teachers and mentors to hold themselves accountable to their goals and to review what methods they are using to ensure its effectiveness. Kolk (2008) adds, that schools must be realistic and have a plan and prepare for it to take time. Kolk explains that School Districts need to look at the big picture, plan for change, and be realistic about the time frames. Lastly, he notes that integration of technology should happen prior to purchasing the technology and that all stakeholders should be aware of emerging actions as expecting people to readily adapt is poor practice.

Alberta Education (1996) notes that school boards look for ways to develop growth in competencies not only in students, but teachers. They also assess how to report on this process. It is important to note that Albertans want the integration of technology to happen properly in their schools; they are in support of long-term planning at a provincial and school district level to make sure money is spent adequately and that school boards make their spending known to the public, (Alberta Education, 1996). Moreover, they suggest that technology planning and coordination groups are needed to assist school boards in this integration process. Schools and school boards should be required to develop technology integration plans. They believe that this plan would have many factors involved such as: developing a ratio of wireless devices to students, teachers access to technology, teacher in-service, hardware and network standards, technology support and maintenance, facility upgrading, measures of monitoring and reporting, and development of business partnership.

Most importantly, Kolk (2008) and Alberta Education (1996) emphasize that accountability for all stakeholders involved must be demonstrated at all levels. The investment in technology integration is crucial and schools need to plan for how they are going to measure their success as documenting results will lead to a better program and improved learning and teaching.

School Culture & Communication Within and Between Teachers

As previously noted by Alberta Education (1996), an effective teacher involves many aspects and numerous stakeholders. An effective teacher in the 21st century needs to be able to adapt his/her practices and environment to meet the learning needs of his/her students at present day.

Teachers are aware of what they need to do, however, implementation of these practices are what can pose as a challenge. Often, teachers venture on this journey by themselves, which, according to Alberta Education (2006) and Jackson (2002), is not the best approach. They believe that in order to have effective schools, strong leaders need to collectively collaborate with the school boards, teachers, coaches, and school community in furtherance of creating environments conducive to the effective use of technology. Similarly, principals need to work and collaborate with others and share their leadership roles especially in regards to integrating a new emerging technology. In relation to this ideal, Fullan stated, "like the business leader, the principal of the future—the Cultural Change Principal—must be attuned to the big picture, a sophisticated conceptual thinker who transforms the organization through people and teams" (2001, p. 8).

Moreover, Fullan (2001), Darling-Hammond (1995), Barth (2001), Irvin (2004), and Hallinger and Murphy (1987) believe it is important to understand how change and growth takes place. They believe that before you have a shared plan or vision, an understanding of the change process, the ability to improve relationships, knowledge creation and sharing must take place. They believe that all stakeholders have say in this shared vision including the families and community of the school.

Recently noted in the literature review, Song (2005) states that the Collaborative Apprenticeship, a professional development model featuring reciprocal interactions, is the method used to assist in technology integration. It is emphasized that through technological experiences, teachers mentor their peers. This adaptation process allows teachers to integrate technology as a relaxed informant where they experience hands on support, collaboration and coaching. It is imperative that community of practice supports the teachers as learners' needs, by allowing the teacher to learn through reciprocal interaction. Kopcha (2008), like Song, supports

teacher led communities of practice as teachers receive the benefits of creating a culture of integration that creates leaders by having models and demonstrations of technology use. BC Ministry (1996), supports sharing among teachers, as they believe those shared relationships will lead to enhanced success of students.

Reciprocal Interactions, having a team of mentors and leaders giving constant support, and creating a community of practice that fosters technological growth in the school culture takes time and hard work. Meetings need to be held consistently and there must be open lines of communication among all parties. In the end it is worth the wait and work.

Contextual Factors to be prepared For

Research has found that providing a mentor or a program to assist in the process of integrating technology is not enough; Steinke and Putnam (2007) found that assigning one expert teacher to the mentoring role is not effective. Moreover, they must be instructed on how to teach adults and their peers. This is why we need a full time tech mentor and a full time maintenance Technician. Additionally, In Krells' study of coaches facilitating learning through inquiry, he found schools often forget to facilitate the learning of the mentor themselves. Having a team to provide support to the mentor would assist in the success of the integration. Coaches in Krells' study indicated that they were challenged by time and not having a plan or method to follow made them less efficient in their role as a mentor. Thompson, Schmidt, and Davis (2003), agree and explain that teachers need more time to develop their practice.

Kopcha (2008) stated that money is another factor that must be reflected upon prior to the implementation process in school districts. As previously stated in the literature review, devices cost money and require the following factors to be considered: shelf life, quality, and trust that the users will be responsible with it. Additional funds need to be allocated and spent on training teachers. Whitfields (2005) believe that you can be successful if you are aware of the

money and time factors in advance and that if you plan and understand them you can work with them.

Tech Mentor Role Essentials

As expressed in the literature review Hertz (2011) stated that a mentor is a bright individual who provides support, motivation, and encouragement to other teachers. Additionally, Hertz explained that mentors need to be an expert in the skills they are sharing, they must lead by modeling practices through their previous experiences, and guide hands-on learning while observing and providing feedback. Most importantly, they must offer solutions to challenges occurring in colleagues' classrooms. This is why a Tech Mentor should be selected carefully as they are required to create a community of practice and develop a school culture that aims to integrate technology. Based on previous experiences, it can very difficult to adapt and try new emergent technologies when the leader is not knowledgeable, does not have the experiences, and is not a person that can work well with others.

The BC Ministry of Education (2001), express that expertise and background knowledge is imperative along with skills needed to mentor and build relationships, as communicating consistently with mentee teachers are continuous responsibilities of the mentor. More importantly, they need to understand how adults learn and how they can assist them in this difficult process.

A Tech Mentor is responsible for guiding and facilitating change. They are assisting in the actions of other people and in the process of this change. Therefore, they play a key role in providing accountability of this transformation. They must be given adequate time for this implementation process, as teachers need the time to adapt their practices as well. Once again, the steps go back in a circular motion, as accountability must be planned for (step one).

Implications for Mentoring	Characteristics of Adult Learners
Encourage teachers to set their own learning goals based on what is relevant to their needs and practical for them personally.	Adults learn best when the material is personally meaningful to them and applicable to their current situation.
Start small and build on success. Begin with a familiar unit or activity and make small changes that integrate ICT. Use this as a springboard for other explorations.	Adults learn through challenging but achievable goals.
Start with what teachers already know. Try to build on these experiences by highlighting similarities and common patterns in different software applications. Most applications are built around similar conventions and keystrokes.	Learning is developmental. Adults learn best when learning is tied to past experiences.
Be sensitive to learning styles and multiple intelligences for example, some teachers need hands-on practice, others are comfortable following a set of written instructions, and others need demonstrations.	Individuals learn differently.
Build opportunities for teachers to talk to each other about the skills they are learning and how they are using them.	Much learning occurs through social interaction.
Provide supportive feedback—Be careful not to identify too many areas for improvement at once.	Learners need feedback to learn.
Teachers who are experienced in integrating ICT often make things look so easy that novices are not aware they are using learned procedures and strategies.	Learners benefit from having successful strategies explained to them.
Provide time and encouragement. Technology produces anxiety for some people. Make sure teachers feel comfortable with the progress they are making.	Learners benefit from a positive emotional climate.

Note. Retrieved and adapted from **Ministry of Education (2002)** Working With Colleagues: A Guide for ICT Mentors. BC: BC Ministry

Figure 2. Implications for Mentors

Carrying out this framework

Despite the fact that you would implement this framework from steps one through ten. It is cyclical in nature (Kopcha, 2008). All points are essential for success and this framework is not integrated and used overnight. As noted previously Glazer, Hannafin, and Song, (2005), believe it to be worth the time and effort and stated, "it proved to be modest by comparison given the limited success of existing approaches and the stakes involved in promoting effective technology integration," (p. 63). Moreover, there needs to be consistency throughout and one must be flexible to allow for the plan to grow, change, and adapt (Fullan, 2002).

Plan Evaluation

In congruence with Step ten of the plan, all parties have to be held accountable. To evaluate the proposed plan there are several steps to follow.

1) You would need to develop a specific model that the tech mentor would follow while working with the teachers inside and outside of their classrooms. (See appendix A, D, and E)

2) In order to check the validity of this transformation you would need a data collection tool to assess multiple teacher's views before, during, and after its implementation, this way you would know how to modify your plan depending on the needs of the other teachers. (see example in appendix C)

3) Use a focus group to ask about colleagues' opinions and beliefs towards community of practices and the Tech Mentor Role so that through discussions different viewpoints become apparent and biases are limited (see appendix H for a list of focus group template questions)

Data and Evidence

Note: Data collected from all stakeholders, teachers, students, principal, and parent community

- School or School Districts vision and preplanning prior to implementation. (see appendix B)
- Individuals' knowledge of community of practice, Tech Mentor role, and technology use in their classroom before we begin in the form of an activity. (see appendix C)
- School communities assessment of conditions prior to implementation, during and after. (see appendix F)
- Individuals' perception of the model after they have experienced it. (see appendix G)
- Individuals' suggestions for reform of the model. (see appendix E and H)
- Teachers or school action plans after one year. (see appendix E)

Strategies of Inquiry/Methods of Collecting Evidence

Survey: Quantitatively assess knowledge; survey to meet the needs of the individual staff.

Focus Groups: One-person records ideas given by a group about certain questions. Due to the fact that communities of practice and shared leadership are key we would need to meet consistently and plan for meetings for the year.

In summary, I am in agreement with Cochrane, Lytle and Smith's (2009) claim that "working from and within an inquiry as stance, then, involves a continual process of making current arrangements problematic; questioning the ways knowledge and practice are constructed, evaluated, and used; and assuming that part of the work of practitioners individually and collectively is to participate in education and social change" (p. 8). I believe that teachers function both as teachers and learners as they go through the process of improving their practices. Moreover, it is my hope that, professional development fosters situated learning in that

teachers want to adapt and or modify their practices because of the multiple perspectives given when participating in communities of practice. Without this happening the implementation of technology would not be authentic or sustained.

A plan is essential for districts implementing technology and technological education into their schools. They need to know where they are coming from, why they are doing, what they want accomplished, and how they are going to administer it. They must know their stance as well as what the literature states about current best practice. I hope to influence my district in this new role and am enjoying learning about what other schools are doing in regards to implementing technology.

Limitations

While this research provides an initial step investigating the role of tech mentor and best practices for integrating technology there consequently are several limitations to this lit review and framework plan. The Tech Mentor role is a fairly new role in Alberta school districts in particular, so there is little research explaining a framework that does and does not work.

It is important to note that the literature in Kopcha (2008) states that there are so many interrelated components that need to be constantly executed when integrating technology, that it would be essential to have a full-time person in each school to ensure the successful progression of the program. Funding for this in schools would be very minimal, and paying for a full-time tech mentor would be highly unlikely. There is also a problem with how the model fades out the mentor. This model fosters independence and sustainability, which is important. However, in educational leadership, the key feature is that the process you are leading must be able to be administered without you being there for a prolonged amount of time, and fading out the mentor is a radical approach. Supports still need to be in place as new technology emerges.

To make this plan more valid, there would need to be studies done within school districts that are incorporating a Tech Mentor, shared leadership, and community of practices. There would also need to be studies and surveys done to document the challenges and success of tech mentors. All parties would need to express their opinions prior, during, and after. This would be a lengthy process to gather this documentation to check if this framework was valid. Lastly, this plan encompasses strategies from various studies and has yet to be carried out. There is not direct outcome to be assessed or to conclude from.

To help support the validity of this framework even more so, data would need to be taken from several schools integrating the framework and cross comparisons would need to be made. This would take a lot of time to conduct and people may not be willing to volunteer their time. School communities are unique and, naturally, the data and results would vary due to so many factors involved.

In conclusion, all four factors are essential in having long-term success for everyone. In most cases people have an idea and plan or method but they do not create benchmarks or indicators that will address the effectiveness of the plan; this is essential. In reference to the Streinke and Putnam (2007) case study, they indicated that the importance of all four factors are essential in having long-term success and they believed every teacher and mentor needs to hold themselves accountable by reviewing what methods they are using to ensure its effectiveness.

Some aspects may be unrealistic in many school districts. Being able to select your mentors and who they are paired with can be very time consuming. We have limited mentors and limited people who are qualified and who want to take on this role. I am in agreement with Streinke and Putnams' (2007) comment that "within technology education, the accountability component can provide an opportunity for both experienced and novice teachers to reflect and make improvements to enhance student learning," (p.40). However, time and leadership is

needed to carry out reflection and one must not stop at reflecting. They need to take action and shared information of what they learned and what they plan to do, which is why Fullan supports community of practice and shared leadership during the change and reflection process (2001).

As previously stated, Kolk (2014) indicated that tech mentors must have the ability to work collaboratively with individual teachers or groups of teachers to integrate technology into instruction, assisting with curriculum and content development. They must also be able to facilitate technology-related professional development for school staff, asses levels of teacher and student technology use and skills. Kolk explained many responsibilities of the Tech Mentor but did not state as a whole who was documenting or in charge of holding all stakeholders accountable. Accountability is essential, but there is limited research stating how to be accountable.

As previously explained Glazer, Hannafin, and Song, (2005), concluded that administrative support, leadership, teacher participation were dependent upon the success and sustainability of their technology integration method. They believed it to be worth the time and effort and stated that "it proved to be modest by comparison given the limited success of existing approaches and the stakes involved in promoting effective technology integration," (Glazer, Hannafin, & Song, 2005, p. 63). Similar to other mentor approaches, this model relied heavily on mutual efforts and cooperation of both parties involved. This is may be an essential feature in any mentorship program, however, this should not be the only determining factor for success. There needs to be a plan in how you are choosing mentors, how they are to mentor others, and assessment in how well they are doing in their role. There are also times where certain parties involved do not wish to put in equal efforts and that is where the mentor needs to be prepared to build those relationship skills in order to improve education for everyone especially the students.

It is evident that issues, biases, and limitations will arise with any transformation of practice. Adopting new methods and or tweaking practices will cause tension. It is clear that there is more to gain from adopting the propose framework as appose to the trials and tribulations that may occur.

Conclusion

As the BC Ministry of Education (2002) and Alberta Education (1996) notes, educators know that technology offers powerful and rich opportunities to enhance student learning. They further articulate that teachers require more than hardware and software to embed those opportunities into their teaching. In agreement with the ministry, it is imperative that teachers receive time, resources, training, and encouragement to develop new skills and the confidence to use them daily.

In conclusion, this proposed plan provides educators with strategies and ideas for assisting teachers in gaining skills, as well as new ways of thinking about how they can create technology enriched classrooms. According to Alberta Education (1996) and the BC Ministry (2002), it is apparent that there is a need for this plan as it provides essential and background information on mentoring, as well as a variety of resources and ideas to support teachers transforming their practice through building knowledge and capacity. It is important to acknowledge that this proposed plan is only part of the foundation needed to successfully integrate technology into teaching and learning. However, it is with intent that it may one day be used as a resource in schools and or school districts. Based on previous experience as a new technology mentor in my district, I believe that having a school collaborate to change their practices and work together when implementing new emerging trends would be the ideal learning environment for all parties involved. When one person has a dream or vision that is not shared, that person can feel powerless, obsolete, and isolated. Nevertheless, it is important to

have multiple leaders to help facilitate and hold others accountable and together everyone can make a difference.

Chapter 4

Professional Journey

Throughout this journey of graduate work it is important to note the individuals who have had great influence on me. I would have to note that the most influential literature I have read would have to be the works of Cochran-Smith and Lytle (2009) were of up most importance to me. They helped me define who I was as an educator. The following metaphor spoke to me as it helped me reflect on my own perspectives and ideals in my own teaching practice. Cochran-Smith and Lytle (2009) found that:

> In everyday language, stance is used to describe body postures, particularly with regard to the position of the feet, as in sports or dance, and also to describe political positions, particularly their constancy (or lack thereof) over time. In the discourse of qualitative research, stance is used to make visible and problematic the various perspectives through which researchers frame their questions, observations, and interpretations of data. In our work, we offer the term 'inquiry as stance' to describe the positions teachers take and others who work together in inquiry communities take toward knowledge and its relationship to practice. We use the metaphor of stance to suggest orientational and positional ideas, to carry allusions to the physical placing of the body as well as to intellectual activities and perspectives over time. In this sense the metaphor is intended to capture the ways we stand, the ways we see, and the lenses we see through (p. 119-120).

In addition, this program has changed the way I perceived curriculum. As teachers we often view the curriculum as the total learning experience for students and focus on instruction. I may have viewed curriculum that way to a certain extent prior to my graduate work. However, now if you share the same ideology as me you take curriculum content and reconstruct it to make sure it is relevant to each individual student. Our own values and beliefs lead us to transform our practices often in the form of implementing new trends. Sometimes they are beneficial to our practice and others times they are not, but it is through collaboration, learning from others experiences, and research that eases the journey to transformation. Previously, without even knowing, I would try to change my school by myself or through the ways that benefited my personal bias. As a mentor I struggled to change a few teachers practice and or way of thinking. I realize now that that was impossible to do on my own.

Moreover, there is no precise way to define curriculum, as there are many complexities that encompass curriculum. Through this graduate program of leadership in curriculum and instruction I have become aware that it is dependent upon what your role is in education and according to Eisner (1994), what ones ideology of curriculum is. Eisner has had a huge impact on how I now perceive my students and how I instruct them. For instance, I believe that education should meet the needs of the whole child; I believe that curriculum should be based on student interest, involving them in active experiences, and that curriculum should be integrated versus split into subjects and timed segments. According to Eisner (1994), I have a progressivist ideology. On the contrary, another teacher may believe that knowledge is constructed through the best textbooks and students formulate opinion through reading. They view the teachers' role as master of content and they focus on developing their intellectual needs. Eisner would state that

this is a rational humanist ideology. Eisner (1994) discussed four other ideologies and noted that many people's ideologies are plural and that we need to live in tension in order to understand our viewpoints. Having had now studied Eisner's philosophies I am more at ease with fellow teachers. I have a greater understanding of where I am coming from and where they are coming from. I have less of a naïve perspective. This assists me when mentoring other teachers. I realize I need to approach teachers differently and am more open-minded even if they are not. Even moving from lower elementary to junior high some of my perceptions have changed especially when it comes to assessment. I now know that I need to continue to have open dialogue with others whether it is in a formal setting of professional development sessions or in the staff room.

Also it is important to take note that the education system is on a spectrum that encompasses many of these ideologies. The Alberta Education (2010) has created five new shifts in the curriculum that support the way I view curriculum. The first shift especially, as it focuses less on the system, and more on the student allowing one to flexibly redesign curriculum to meet the needs of all students individual needs. I have always been up to date with new trends and new shifts, but I never reflected on how it affects my beliefs and me.

Many people who are not teachers have the perception that curriculum is linear or prescribed. They would primarily describe curriculum as; a written or recommended program, the interaction of students with instructional content, materials, resources, and processes for evaluating assessment of educational objectives. Eisner (1994) would state that they are referring to the explicit curriculum and that this is a minor part of what schools actually teach. As a teacher there are three components of curriculum that Eisner (1994), suggests that you must be aware of; 1) Explicit curriculum 2) Implicit Curriculum 3) Null Curriculum. According to Eisner

(1994), the implicit curriculum of the school is what the school teaches because of the kind of place it is and the school is that kind of place due to; various approaches to teaching, the organizational structure it employs to sustain its existence, the environment, the timed schedules that are in place, the values and attitudes of teachers and students and school community. He noted students learn a great deal in school from sources other than the intentional curriculum. The null curriculum is basically what is not taught or in some cases what should be added in connection to the explicit and implicit curriculum. Eisner (1994) explains null curriculum as, what schools do not teach may be as significant as what they do teach and he expresses that when certain subjects are taken out, a message is sent to students that certain topics and processes are not important. Until this program I was aware of this but did not pay much attention to this. Teachers face the dilemma of having to pick and choose components to omit in relation to explicit and implicit curriculum that they deem as unimportant or of lesser value. Eisner explains that when doing this, "students loose out on perspectives and intellectual processes" (Eisner, 194, p. 97). Eisner has now made me think before I teach. He has reaffirmed how I treat students as human beings. I believe we need to look at the null curriculum as it affects how they learn and it affects their success for the future.

Attention to instructional leadership in the last decade has been changing immensely. This being partly due to the fact that the educational system has gone through and is currently going through a lot of change in emergent trends, integration of new technologies, and changes in curriculum in Alberta's government. This is accompanied by a need to evaluate the effectiveness of various expenditures. Based on what I have read and researched throughout this program I have found a common important point, that being there needs to be a shared role in

instructional leadership between principals, teachers, and individual school communities. This means the development in building a team of instructional leadership is prevalent and it will take time to develop these new roles. The mistake we have been making is assuming the principal is the only person in the school responsible for instructional leadership. To have an effective school we need to collectively collaborate with the school administration, teachers, coaches, and school community and lead as a group. This will take time and building an effective instructional team will not be easy. What makes a school successful is when all leaders work together to secure community support and footprints of the school student progress and vision is present throughout the community. All stakeholders have a positive and collaborative relationship in which the partnership benefits both parties. A successful school is one that is constantly transforming and everyone is an active learner. Teacher leaders willingly meet, collaborate, and learn and grow with one another. Most importantly, the whole school community shares a vision and holds similar yet high expectation for achievement of everyone in the building. I feel that learning about shared leadership has truly been the most influential and beneficial to my future career in leadership. I feel that everyone who is in or is planning on taking on a leadership role should study what the literature has to say in regards to shared leadership, especially Fullan specifically. Leaders want the best for all; often their biggest mistake is not finding out what affects all the people they are trying to help! We all come from different places and cannot help but come with our own biases.

The commencement of my postgraduate studies has provided me with opportunity to reflect on what I perceive to be important in researching my practice. I believe it is important to discern yet be receptive to your own values and beliefs, as it assists with reflection and subsequent transformation of your practice as a teacher. Professional learning plays a key role in

this process and to be able adequately, and objectively, research teaching; you must collaborate with others. Without all components of this process, a teacher can be left with a narrow view of how to transform his or her practice, and it may become unethical for his or her to have an objective stance on the subsequent findings.

Through my text to self-connection in one of my classes I was able to be critical of my first experience with an action research project, which allowed me to have a better understanding of what it is to be both practitioner and a researcher. Prior to this post graduate program, I was misinformed and or not knowledgeable on researching my practice. I can now think back to when I attempted to do action-based research. Through a program called Alberta Initiative for School Improvement (AISI), we were given a task to design school improvement projects that promote pedagogical changes. My grade six colleague and I were told to take an idea and bring it to the professional learning community. We presented our idea without asking what our colleagues thought. We then went to the students and parental community with a survey that we thought would connect the whole community together to change a common issue; however, we did not come to a consensus what that common issue was. Moreover, we realized that our surveys were not useful, but could not identify why.

I now realize the value of the third dimension, as "practitioner inquiry communities are the primary medium or mechanism of for enacting the theory of action"(Cochrane-Smith & Lytle 2009, p.139). You cannot take action and transform social issues or educational issue without involving the views of the community. To assist us, we then contacted our (AISI) consultant who came into help conduct research. Not understanding why our project was not going anywhere frustrated my colleague and I and initially we did not value what the consultant had to say. I now realized this hindered us from further developing our project. I now understand the importance of

what Huberman (1999) was saying when he stated “possibilities for powerful insights engendered by sustained interactions between researchers and practitioners might surpass in importance insights arising from conversations among peers in their own discourse communities. This might develop new ideas “better suited to understanding life in schools” and lead to “the achievement of actual symmetry of power and influence between researchers and teachers “(as cited in Cochran Smith & Lytle article 2009, p 137). Consequentially, I wish I would have been open-minded and intuitive to what the community valued and would have worked together with researchers instead of against, as I now understand and value the outlook of others. I now hope and believe I will do things differently especially when I take on a leadership role as involving the school community the right way is essential to the success of everyone.

Future for professional career

Following this graduate program my aims and goals for the future are still what I had intended prior to applying for this program. My letter of intent stated the following, “With my experience as a Tech Mentor for the past three years I have come to enjoy my development as a Leader and a Mentor to my fellow colleagues and school community. Through my grant work through Early Learning I have come to open my mind to endless possibilities with Educational Leadership and would like to continue and further my role in it. In the future I hope to one day obtain a Leadership Role whether it may be as a Curriculum Consultant or an Administrator.” However, if I were to obtain a leadership role, I feel I would approach it differently and or be more prepared.

In regards to my research and proposed plan I believe it provides educators with strategies and ideas for assisting teachers in gaining skills, as well as new ways of thinking about

how they can create technology enriched classrooms which is currently a need. My intent was that it maybe used as a resource in schools and or school districts. Most importantly, next time I want to change or embed something in my school or if someone else has a dream or vision, I would suggest that there be multiple leaders to help facilitate and hold others accountable and together everyone can make a difference.

I now can articulate what my perception of a great leader would be and what I aspire to be following this program. I believe that a good leader mobilizes others toward a goal shared by leaders and followers. I hope to take that knowledge in the future to help make good decisions to better my school and or school district in the future. Most importantly I hope to manage and establish a learning environment whether it be as a tech mentor or administrator where people are self-motivated toward the mastery of long term constructive goals, in a participatory environment of mutual respect, compatible with personal values (Vance, 2015).

Recommendations for other educators

I have come to the consensus that in order to be a great educator you must constantly rethink and realign relationships between practitioner and researcher and learn through collaborating with other professionals, leaders, and the community. Prior to integrating technology into schools through new emerging technology or through the role of tech mentor everyone apart of making this goal a success should do their research on the literature, success models, and the technology itself. In addition, educators wanting to integrate a new emerging trend and or technology specifically must be prepared to plan, become knowledgeable of their trend, and be realistic about the time that is needed. Have realistic expectations with time are key. You cannot successfully change ones instruction or practice over night. Lastly, when

integrating something new in a school all parties need to be involved in the entire process and they must be held accountable. There needs to be indicators set up in place to see how everyone involved is doing and everyone must have time to reflect, change, and adapt. If you plan for your shared vision appropriately and you meet your clear and realistic expectations you will have more of a chance for success and sustainability.

References

Alberta Education (1996) F*ramework for Technology Integration in Education.* Retrieved from https://education.alberta.ca/media/822543/mlareport.pdf

Alberta Education (2010) *The Alberta School Leadership Framework:Promoting Growth, Development and Accountability* Retrieved from http://education.alberta.ca/media/2266441/thealbertaschoolleadershipframework.pdf

Alberta Education (2013) *Learning and Technology Policy Framework: The Role of Technology in Achieving the Vision* Retrieved from http://education.alberta.ca/admin/technology/policyframework.aspx

Association for Educational Communications and Technology (2008). Definition. In A. Januszewski and M. Molenda (Eds.), *Educational Technology: A definition with commentary.* New York: Lawrence Erlbaum Associates.

Apple Classrooms of Tomorrow. (1999). Apple learn- ing professional development design principles. In Apple Classrooms of Tomorrow (ACOT): Vol. 1999/2002.

Barth, R., S. (2001). Teacher leader. *Phi Delta Kappa International, 82, 443-449. Retrieved from* http://www.jstor.org/stable/20439932

British Columbia Education (2002) *Working with Colleagues: A Guide for ICT Mentors.* Retrieved from **https://www.bced.gov.bc.ca/irp/pdfs/applied_skills/support_materials/mentors.pdf**

Chuang, H., H., Schmidt, D., Thompson, A. Faculty Technology Mentoring Programs: Major Trends in the Literature. Retrieved from http://www.public.iastate.edu/~mstar/mentor/Technology_mentoring0128.htm

Coats, M. (2005). Action Research A guide for Associate Lecturers. Retrieved from http://www.open.ac.uk/cobe/docs/AR-Guide-final.pdf

Cochran-Smith, M. & Lytle, S.L. (2009). Inquiry as stance: ways forward (Ch.5) in Inquiry as stance: Practitioner research for the next generation (pp. 118-165). NY: Teachers College Press.

Cofino, K. (n.d.). Creating a Culture of Collaboration Through Technology Integration. always learning RSS. Retrieved July 26, 2014, from http://kimcofino.com/blog/2010/03/20/creating-a-culture-of-collaboration-through-technology-integration/

Darling-Hammond, L., Bummaster, M. L., & Cobb, V. L. (1995) Rethinking teacher leadership through professional development schools. Elementary School Journal, 96, 87-106. Retrieved from http://www.jstor.org/stable/1001667

Dawson K. (2007). The Role of Teacher Inquiry in Helping Prospective Teachers Untangle the Complexities of Technology Use in Classrooms. Journal of Computing in Teacher Education, v24 n1 p5-12 (EJ833921) retrieved from

http://web.ebscohost.com.ezproxy.library.uvic.ca/ehost/detail?vid=5&sid=cc7fc030-659b-4d1e-aec3-c1af89cf70cc%40sessionmgr4&hid=21&bdata=JmxvZ2luLmFzcCZzaXRlPWVob3N0LWxpdmUmc2NvcGU9c2l0ZQ%3d%3d#db=eric&AN=EJ833921 on July 20, 2014

Fichtman-Dana, N. & Yendol-Hoppey, D. (2009). Facilitating the professional development of others: The role of action research in professional learning communities (Ch.1) in The reflective educator's guide to professional development Coaching inquiry-oriented learning communities (pp.1-17). Thousand Oaks, CA:SAGE Publishers.

Fullan, M. (2002). The change leader. *Educational Leadership*, *59*(8), 16–21. Retrieved from http://www.ascd.org/publications/educational-leadership/may02/vol59/num08/The-Change-Leader.aspx

Glazer, E., Hannafin, M. J., & Song, L. (2005). Promoting Technology Integration Through Collaborative Apprenticeship. Educational Technology Research and Development, 53(4), 57-67

Hallinger, P., & Murphy, J. (1987). *Organizational and social context and the instructional leadership role of the school principal* Retrieved from http://search.proquest.com.ezproxy.library.uvic.ca/docview/63020729?accountid=14846

Hallinger, P. (2005) Instructional leadership and the school principal: A passing fancy that

refuses to fade away, leadership and policy in schools, 4(3), 221-239, Retrieved From http://www.tandfonline.com.ezproxy.library.uvic.ca/doi/pdf/10.1080/15700760500244793

Hertz, M. (2011). Mentoring and Coaching for Effective Tech Integration. Edutopia. Retrieved from http://www.edutopia.org/blog/mentoring-coaching-tech-integration-mary-beth-hertz

Irvin, L., J., & Flood, S., P. (2004). What research rays: Instructional leadership: it's Not just for principals anymore. *Middle School Journal* , 36(1), pp. 54-60. Retrieved from http://www.jstor.org/stable/23024462

ISTE. (2015) *Essential conditions survey (*pdf). Retrieved from http://surveymonkey.com/s.asp?u=567621488947

Jackson, L. (2002). Teacher Training: Staff Development Through Peer mentoring Education World. Retrieved form http://www.educationworld.com/a_admin/teacher_training/teacher_training006.shtml

John, J., L. (1991) Instructional leadership and community: A perspective on school based management. *Theory into Practice, 30(2), 119-123.* Retrieved from http://www.jstor.org/stable/1476986

Kemmis, Stephen (2006) 'Participatory action research and the public sphere.' Educational Action Research, 14: 4, 459 — 476. doi:10.1080/0965079060097559

Kolk, M. (2008). Strategies for Effective Implementation. (n.d.). Creative Educator -. Retrieved July 26, 2014, from http://creativeeducator.tech4learning.com/v09/articles/Strategies_for_Effective_Implementation

Kopcha, T. J. (2010). A systems-based approach to technology integration using mentoring and communities of practice. Educational Technology Research and Development, 58(2), 175-190.

Krell, D. E. & Fichtman Dana, D. (2012). Facilitating action research: a study of coaches, their experiences, and their reflections on leading teachers in the process of practitioner inquiry. Professional Development in Education, 38(5), 827- 844. doi:10.1080/19415257.2012.666052

Lancaster, A., S. (September 2006). Time, Support and Follow-up: The Keys to Successful Professional Development. Retrieved from **http://www.itdl.org/journal/sep_06/article04.htm**

Leslie J., C., & Sommerville, J. (1991). Teaching as instructional leadership. *American Secondary Education*, 19(3), 13-17. Retrieved from http://www.jstor.org/stable/41063962

Loughran, J. (2013). Pedagogy: Making sense of the complex relationship between teaching and learning, Curriculum Inquiry, 43(1), 118-137, doi:10.1111/curi.12003

Moursund, D., & Bielefeldt, T. (1999). Will new teachers be prepared to teach in a digital age? A national survey on information technology in teacher education. Research report by International Society for Technology in Education, Publication of Milken Exchange on Education Technology

Ohler, J. (2005, January 5). Retrieved December 20, 2014, from http://www.jasonohler.com/pdfs/technology_metaphors.pdf

Printy, M., S., & Marks, M., H. (2006). Shared leadership for teacher and student learning. *Theory into Practice*, 45(2), 125-132 Retrieved from http://www.jstor.org/stable/40071586

Seels, B., Campbell, S., & Talsma, V. (2003). Supporting excellence in technology through communities of learners. Educational Technology Research and Development, 51(1), 91-104.

Shelly, G. B., Cashman, T. J., Gunter, R. E., & Gunter, G. A. (1999). Teachers discovering computers: A link to the future. Cambridge, MA: Course Technology.

Smylie, M., A. (1992). Teachers' reports of their interactions with teacher leaders concerning classroom instruction. *Elementary School Journal* 93, 85-98. Retrieved from

http://www.jstor.org/stable/1002047

Steinke, L., & Putnam, A. R. (2007). Mentoring Teachers In Technology Education . The Journal Of Technology Studies, 0, 41-49. Retrieved July 22nd, 2014, from http://scholar.lib.vt.edu/ejournals/JOTS/v37/v37n1/pdf/steinke.pdf

Stronge, J. (2002, January 1). Qualities of Effective Teachers. Retrieved December 15, 2014, from https://www.questia.com/library/119449303/qualities-of-effective-teachers

Sun Associates (2014) *Evaluating the Impact of Technology on Teaching and Learning*. Retrieved from http://www.sun-associates.com/eval/sample.html

Thompson, A. D., Schmidt, D. A., & Davis, N. E. (2003). Technology collaboratives for simultaneous renewal in teacher education. Educational Technology Research and Development, 51(1), 73-89.

Wenger, Etienne (c 2007) 'Communities of practice. A brief introduction'. *Communities of practice* [http://www.ewenger.com/theory/. Retrieved November, 2014.

Whitfield, C. (2005) The Five Essentials of Technology Facilitators: Successful On-Site Help for Technology Integration. Retrieved from http://www.techlearning.com/professional-development/0017/the-five-essentials-of-technology-facilitators-successful-on-site-help-for-technology-integration/42544

Woolrich, R., Wilson, D. (n.d.). Making Disciples: The Effects of Technology Integration Coaching. The ICCTE Journal. Retrieved July 25, 2014, from http://icctejournal.org/issues/v8i1/v8i1-wilson-don-burpbacher/

Appendix A

Appendix A Characteristics of a Good Mentor (use before and after)

Read each descriptor and place a check mark where you think you are. This tool will help you assess the strengths and weaknesses you bring to mentoring.

	Rarely	Sometimes	Frequently	Most of the time
I have good people skills				
I like working with others				
I am competent with the technology				
I know where to look for assistance				
I see myself as a competent professional				
I am patient and tolerant when teaching someone a new skill or task				
I have skills for dealing with frustrating situations				
I am sensitive to the needs of others				
I listen without judgment				
I am willing to learn in front of others				
I am confident and secure in my knowledge and make an effort to stay up to date.				
I am flexible and willing to adjust				
I can guide learners through the steps of using technology tools				
I am able to offer assistance or resources when others are challenged				
I am able to facilitate learner-directed				

learning				
I know when others need support or independence				
I like to share my knowledge				
I use inclusive language and behaviour when introducing new technology				
I want to contribute to the professional development of others				
I am an effective communicator				
I respect colleagues, valuing differences				
I am able to support and advise				
I set high standards for myself and those around me				
I have a professional growth plan that addresses growth in education technology				
I model good use of technology in my classes				
I apply technology to increase critical thinking skills and creativity in my students				

Retrieved from Ministry of Education (2002) Working With Colleagues: A Guide for ICT Mentors. BC: BC Ministry

Appendix B

District Information to Consider when Planning

	Comments
Find out about your district technology plan. What professional development and in-service support for technology integration does it offer? How can participants access available funds/programs?	
What software acquisition policies or guidelines does your district have? What site licenses/provincial licenses does your district have?	
Does your district have a plan to assist educators in purchasing home technology equipment and/or software through loans, bulk buys, etc.?	
Are technical support personnel available in your district? How do people access this support? Are there restrictions on their use and availability?	
Is there a minimum standard or level of equipment for each elementary and secondary school in the district? Who makes these decisions in your district? How are choices made?	
What is the district Acceptable Use Policy? Does each school have a separate one, or is it the same?	
Does your district provide information to parents regarding Internet safety? What kind of information?	
Does your district provide email accounts to students? What guidelines exist? Can schools establish their own policies?	
Other	

Retrieved and adapted from Ministry of Education (2002) Working With Colleagues: A Guide for ICT Mentors. BC: BC Ministry

Appendix C

Parent Survey

Do you have a sense for what your school's "vision" is for how technology is used as a tool for learning..and how is this communicated to you as a parent?

What learning skills do you feel are important for your students to develop? (It's ok if they start by taking about "tech skills", but then probe for things beyond . Probe for things like communication, collaboration, thinking skills, etc.)

To what extent do you feel that your children are developing those skills – technology and other - through their school experience?

What "21st century" learning skills do you feel are important for your students to develop? (probe for things beyond "tech skills" or PPT……)

Can you recall specific student projects or activities that promoted or encouraged the development of these skills?

How satisfied are you with the amount and type of technology that seems to be available for your children to use at school? Any suggestions for changes or improvement?

Are there any other specific technology skills or experiences would you like your children to have while at XXXX Public Schools?

Students Questions (Secondary)

I'd like to start by getting a feel for the kinds of things you have been doing with technology as part of your schoolwork in high school…could you describe something you've used technology for this year?

So, in thinking about the kinds of work you have been assigned in high school, as well as what you may be doing beyond high school, what kinds of technology skills do you feel are important to have?

How helpful was the 9th grade "21st Century Computing" course in developing the skills you need?

Thinking back over the years that you've been in WP schools, do you feel that you've consistently been assigned work that involves technology? Or, were there some years where there was a lot more or a lot less ? Why do you think there was this variation?

Do you believe that you have sufficient access to technology at school to those things that you want and need to be able to do with technology? Has this been consistent over the years you've been in WP? (try to probe for differences between secondary school where they are now and

their experience in lower grades/elementary)

Do you feel that what you've done in school with technology (what you've used, what you've learned) has prepared you for your future after you leave school? Why or why not?

Policies/Administrator Questions

What do you feel has been the greatest catalyst – and why – for the use of technology as a tool for teaching and learning among the teachers?

What 21st century learning skills do you feel are important for your students to develop? Could you give an example of how these are encouraged in your school?

Role of the Administrator

What do you see as your role as an administrator in helping move forward the work of technology integration?

What's your vision – your ideal - for the role of technology in teaching and learning? (make sure that they understand that we're not asking about day-to-day reality, but the IDEAL. PROBE for 21st century skills…even if you don't use that term.)

How is this vision conveyed and demonstrated to your teachers and the parent community? Do you feel that your vision is shared by all teachers and the parent community?

What, in your opinion, do you and your teachers need in order to fully realize this vision?

What can you as a building principal do to support integrated, effective use of technology throughout your school and parent community? And specifically, how do you motivate teachers to implement your vision for the use of technology as a tool for teaching and learning?

Teacher Questions on Curriculum and Pedagogy

Student Use of Technology

Describe how your students typically use lab or classroom computers (specify lab or classroom).

Please describe the relationship – as you see it - between technology and your curriculum. For example, how integral are technology tools for you and your students in mastering curriculum objectives?

Technology's Overall Impact on Teaching and Learning

How do you know when your students are using technology as an effective tool for learning? What do you see?

What role does technology play in helping you achieve your overall curricular objectives. Could you give an example of something from your classroom that illustrates how technology impacts student learning?

Can you provide any examples of how you or your students utilize technology to support individual learning styles?

What role does technology play in helping you achieve curricular objectives? (probe for any more general role in meeting student learning in general)

What barriers do you face in achieving your objectives related to using technology as a tool for teaching and learning? (probe for barriers related to PD, Policies, Administrator actions)

21st Century Skills

How would you define a 21st century learning environment? How does your classroom and what happens in it reflect this definition?

What 21st century learning skills do you believe are important for your students to develop? Can you give an example of how these are encouraged in your classroom?

What elements of project-based instruction have you incorporated into your classroom? (make clear that this is with and without technology)

What does the term "technology integration" mean to you, and what does it look like in your classroom?

What technology skills do you feel are important for your students to develop? (i.e., what skills do students need to be considered technology literate)? And how do your students currently develop their technology skills?

Through what classroom activities/courses/assignments do your students currently develop these skills? (probe for any info on particular technology tools or applications used.)

Professional Development

What sorts of technology professional development are available to you? (probe for general opinions about PD as well as the kinds of "sharing", "flexible" etc. models that are spoken of in the indicators)

Please describe the type of PD that best helps you learn about and implement new teaching methods. How could the district more effectively meet your professional learning needs? (probe for ideas about how PD has – or could – impact student learning in their classrooms)

Can you describe some specific ways that your PD experiences have impacted student learning in your classroom?

What portion of your common planning time would you estimate is used for issues related to technology? (try to get a feel for whether this works for them and/or do they get adequate time to do what they need to do with technology)

Do you have any ideas for how your school or the district could be more helpful in helping you develop curriculum ideas/activities that utilize technology? (Probe for ideas related to professional development, support, curriculum requirements, etc.) What if any incentives exist for motivating you to integrate technology into your curriculum and other classroom learning activities?

Appendix D

Guiding Questions for Mentee Teachers (MTs)

Preplanning Exploring a focus	
What excites me about my teaching? About technology? How am I currently using research and the research process in my classroom? What are some of the things that I would like to explore around technology?	What are your favourite units? What are some of the things that you do really well with your students? What is one thing that you would like to do differently in your teaching? How can you blend your interests in teaching with your interests in ICT?
Pre-Planning: Self-Assessment	
What are my current ICT skills? What are the gaps I want to fill? What tools are available in my school? What technology learning is a priority in terms of my needs and interests? What resources/ support can I draw upon to learn on my own? in my school?	Are there some basic skills I will need before I proceed? What should my first priority be, given that I have limited time? Which skills might add the greatest value in my classroom? What are my immediate learning goals? What are my long-term learning goals?

Retrieved and Adapted from Ministry of Education (2002) Working With Colleagues: A Guide for ICT Mentors. BC: BC Ministry

Appendix E
Action Plan

What do I need to learn first? **Guiding Questions for Mentee**	**Reflection Questions for Mentees**
What is my immediate goal? How will this goal move me towards my long-term goal? What is a logical time frame?	How can I make MTs aware of all ICT possibilities, prerequisite skills, and how to build from one level to another? Can teachers work with colleagues to acquire skills or share expertise?
How will I use this new tool/skill/strategy?	**How will I use this new tool/skill/strategy?**
Where does it support the research process? How else might I use this? Is this going to be worth the time, energy and effort? Will it support learning and instruction, enhance it, or make new learning experiences possible in my classroom?	Consider the time required to learn the tool in relation to its general utility (not to discourage MTs from trying new things, but simply to make sure they are aware of what might be involved in terms of effort for the potential gain). How does this tool link to research and the Research Quest? To effective and appropriate uses of ICT? Does the MT need help in identifying clear and practical steps?
What will success look like?	**What will success look like?**
What will I be doing differently? What will my students be doing differently?	What are the expectations for student performance? What specific strategies will be used to assess student work?
How will I monitor my plan?	**How will I monitor my plan?**
What kind of data can I collect?	What feedback might be useful?

What kind of feedback will be most helpful from my mentor? What is working for me? What is still a concern?	What adjustments or corrections might be made? What is going really well? What concerns exist? What have you learned that might be shared with others? What variations and adaptations are possible? Can you use this in other settings?
What is my new goal?	**What is my new goal?**
	How does this lead to achieving the long-term goal? What are the next steps in the process?

Retrieved and Adapted from Ministry of Education (2002) Working With Colleagues: A Guide for ICT Mentors. BC: BC Ministry

Appendix F
Condition Survey

Conditions Survey (Pre and Post)

The following questions are based on the Essential Conditions for Effective Technology Integration developed by the International Society for Technology in Education (ISTE - www.iste.org). Please answer honestly, as this information will help you understand how best to support technology implementation at your site.

1.ACCESS—Do teachers and administrators at your school have access to current technologies, software, and telecommunications networks? Select the description that best characterizes your school:

Level 1: student access to technology is limited to lab settings. Teacher access to the technology hardware is inconsistently limited to offices or workspaces. Access to technology resources is tightly controlled, creating a somewhat negative or competitive environment within the school.
Level 2: Access to technology is available in the classroom to support learning, teaching and productivity. Access to technology resources is growing to include both classroom and lab settings for student use. Telecommunications and network resources are not consistently available (e.g., internet or email is frequently unavailable).
Level 3: Access to current technologies, software, and telecommunications networks is provided for our students, teachers, and support personnel, both inside and outside the school and during and beyond the school day.
Level 4: Our school supports "on-demand-access" to technology resources – hardware and software, telecommunications, and other online resources for students and teachers including home, community, and global access.

2. PROFESSIONAL DEVELOPMENT—Do the educators at your school have consistent access to appropriate professional development to support technology use in teaching and learning? Select the description that best characterizes your school:

Level 1: Professional development in technology focuses only on technology skills and is limited. The professional development is not based on an assessment of teacher and student needs and does not appear to be based on a comprehensive technology plan. The training often lacks the necessary equipment/ tools and/or time.

Level 2: Professional development is provided for all but focuses more on technology skills than on application of technology in teaching and learning. The professional development is not based on an assessment of teacher and student needs and does not appear to be based on a comprehensive technology plan. While the time is sufficient, there is often a lack of sufficient equipment/tools.

Level 3: Timely, ongoing professional development is provided for all based on needs assessments and focused on technology skill development and application of technology in teaching and learning, with the time and equipment to be successful. The professional development opportunities provided use various modes of delivery and are evaluated for effectiveness and satisfaction. Professional development is based on a comprehensive technology plan.

Level 4: Professional development focused on technology skill development and application of technology in teaching and learning is available "on-demand" in a mode suitable to various learning styles. The professional development is supported by our school with the necessary resources (equipment, time, money, people, etc). Professional development opportunities are regularly evaluated, inviting input from participants that is used for revisions and designing new opportunities.

4. ASSESSMENT—Is there continuous assessment of the effectiveness of technology for learning at your school? Select the description that best characterizes your school:
Level 1: Technology is periodically assessed in terms of the frequency of teacher use and the presence of hardware or resources, but not in terms of the effects on instruction and student learning. For example, simple grade book packages may be used for examining student learning data, or a spreadsheet is used for tracking teacher use of technology.

Level 2: Technology use is assessed in terms of teacher utilization and student outcomes in some curriculum areas by innovative teachers, with nominal administrative support. Technology is used for aggregating student performance data for the purpose of making curriculum decisions in some areas, but not systemically.

Level 3: There is administrative support for teachers in using technology tools and assessment to measure the effectiveness of technology-supported teaching strategies. Results are used to examine student outcomes, inform future planning and teaching, and drive further assessment as well as to inform procurement, policy, and curriculum decisions.

Level 4: There is an institutional commitment to comprehensive use of technology in assessment for the purposes of informing teaching, learning, policy, procurement and curriculum decisions. A shared vision of how technology resources are assessed, upgraded, and retired indicates a support of technology use in teaching and learning at all grade levels.

5. COMMUNITY SUPPORT—Do community and school partners provide expertise, support, and resources for your school? Select the description that best characterizes your school:
Level 1: Our school and community are inconsistently, informally connected, causing unnecessary duplication of efforts and resources in supporting technology use in teaching and learning. Although there is awareness of real-world uses of technology, there is little connection in teaching and learning experiences.

Level 2: Some classrooms in our school are strongly connected with parts of the community, resulting in support and resources for that classroom, but this is not true school-wide. Similarly, in some classrooms there is a connection to real-world uses of technology, but primarily as a

result of the effort of individual teachers as opposed to an approach that is supported and reinforced across the school.

Level 3: Students and teachers experience technology in real-world settings, making connections to models of technology use in the community. The school and community are closely connected in these activities, supporting each other's work and maximizing shared resources.

Level 4: The school and the community are integral to the mission and vision of each other. There is a feeling of reciprocity in teaching and learning – the school and community assist and inform one another. Teachers actively involve technology-rich, real-world experiences in the process of learning content.

6. SUPPORT POLICIES—Are school policies, financing, and reward structures in place to support technology in teaching and learning? Select the description that best characterizes your school:

Level 1: The incentive and reward structures at our school do not seem to encourage teachers to use technology in teaching and learning. Resources for technology are not designated in specific budget lines but are combined with other budget items.

Level 2: Some policies appear to support the integration of technology in teaching and learning while others need some improvement. Inconsistency in the application of policies leads to confusion about the guidelines for appropriate use of technology.

Level 3: The personnel and resource acquisition policies, budgets for programs, technology-based resources, and reward and incentive structures for teachers support the use of technology in teaching, learning, and professional collaboration. However, inconsistent application of the policies in some areas leaves lingering confusion about what is considered appropriate use of technology.

Level 4: Administrative support policies including budgeting, personnel, and reward and incentive structures are consistent and supportive of a shared, proactive, dynamic vision for the use of technology in teaching and learning.

7.SHARED VISION—Is there proactive leadership and support teaching and learning from the entire school?

Level 1: Each group of individuals within our school has an idea of how technology should be implemented and supported. However, there is not yet an open consensus built around the vision, nor is there a concrete implementation plan to support the vision.

Level 2: There has been a collaborative consensus-building process for establishing a consistent and well-articulated vision to support students, parents and teachers in their use of technology in teaching and learning. However, there is not yet a concrete and thorough implementation plan to support the vision.

Level 3: School teachers and administrators have reached consensus on a well articulated vision to support students, parents and teachers in their use of technology in teaching and learning. There

is a collaboratively designed implementation plan to support the vision that is proactively supported by the leadership at our school.

Level 4: There is an ongoing process for building consensus and establishing and revising a well-articulated vision to support technology use in teaching and learning throughout our school community. Our implementation plan reflects not only the shared vision, but also proactive leadership and a collaborative atmosphere for sharing resources to bring the vision to life.

Retrieved and adapted from ISTE. (2015). *Essential conditions survey (*pdf). Retrieved from http://surveymonkey.com/s.asp?u=567621488947

Appendix G

Program Evaluation Surveys

PROGRAM COORDINATOR (Emerging Technology team/ consultants) MENTOR, AND MENTEE (Teachers)
PROGRAM EVALUATIONS

For Program Coordinators

1. Did the mentor program run as you planned? Why or why not?

2. What are the strengths of your program?

3. What areas of your program need improvement?

4. What aspects of your mentor program would you like to improve?

5. How could your school/business/community partner further assist you in coordinating the mentor program?

6. Did you feel overwhelmed or burdened by coordinating the mentor program?
   If yes, explain why.

For Mentors

We would like to have your opinion of the mentor program so that we may evaluate and strengthen our program for the future.

1. How would you rate the mentor program?

excellent very good good poor

2. How would you describe the quality of your experience as a participant in the program?
   excellent very good good poor

3. Did the mentor training session help you prepare for your mentoring experience?
   yes somewhat not sure no

4. Would you have liked additional training for mentors?
   yes maybe probably not no

5. How clearly defined were your mentor responsibilities?
   very clear moderately clear a little unclear very unclear

6. The mentor program coordinators were accessible and easy to talk to and seek advice from when necessary.
   always somewhat not much never

7. How would you describe your relationship with your mentee?
   very good good fair poor

8. Do you think that the time you spent with your teachers was sufficient?
   yes almost not really no

9. Did you gain personally from this relationship?
   yes somewhat not much no

10. I would have preferred to meet less often with my teachers.
    yes sometimes rarely no

11. I would have preferred to meet more often with my teachers.
    Yes sometimes rarely no

12. What was most satisfying about the mentor program?

13. What was least satisfying about the mentor program?

14. What would you suggest to improve the mentor program?

For Teachers

We would like to have your opinion of the mentor program so that we may evaluate and strengthen our program for the future.

1. How would you rate the mentor program?
   excellent very good good poor

2. Did you enjoy being part of this program?

yes somewhat not much no

3. Would you want a mentor next year?
   yes probably not really no

4. Did you like your mentor?
   yes somewhat not much no

5. Did you think meeting with a mentor was fun?
   yes somewhat not really no

6. Would you have liked to meet with your mentor more often?
   yes a bit more not much more no

7. Did you learn new things from your mentor?
   yes somewhat not much no

8. Did you feel comfortable talking to your mentor about things, either good or bad?
   yes somewhat not really no

9. List some of the activities you did with your mentor:

10. List something (if anything) that you learned from your mentor.

11. What did you like best about the mentor program?

12. What did you not like about the mentor program?

13. What do you think we should change or do differently next year?

Note: Retrieved from Mass Mentoring Partnership (2015), *Mentoring A-Z Training Manua* (PD

Appendix H

Focus Group Meetings Outline

Sample Outline for Meetings with Mentees (Focus Groups)
Meeting 1: Get to know participants Introduce program Gather contact information Talk about schedules Establish personal boundaries re: contact times and availability Share: Technology Self Assessment, Pre- Planning Template and Scan of Resources Meeting 2: Gather self assessment information Establish priority needs Group teachers so they can share skills Share pre-planning reflections Establish interests, possible goals etc. Meeting 3: Ask individuals to bring a unit or project that they have used in the classroom Share, then select one or two to work on as a large group In the large group, suggest a variety of ways to successfully integrate ICT into the selected unit. Use this as an opportunity to discuss effective, and appropriate uses of tools Work in small groups or pairs to explore how technology might be integrated into this unit of instruction Present small group findings Subsequent Meetings: Create Personal Action Plans and timelines for each person Select tools/ applications for group exploration Explore developing resources using critical questions and the research process Share successes and problems Teach process of providing feedback by offering a project for peer review *Remember, providing on-going support is easier if communication is frequent and sharing sessions are scheduled regularly.* CELEBRATE SUCCESSES

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