

**TEACHING AND LEARNING ONLINE:
SUPPORTING TEACHERS IN K-12 EDUCATION**

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Dedication

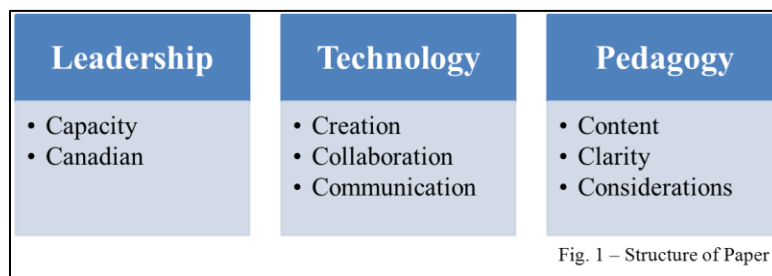
This work is dedicated to my partner Neal, who has been at my side every step of the way. Throughout this journey, I have learned what I am capable of, and know that together, we are stronger. Without your love and support, I would not have been able to achieve this milestone. I thank you, and I love you.

Abstract

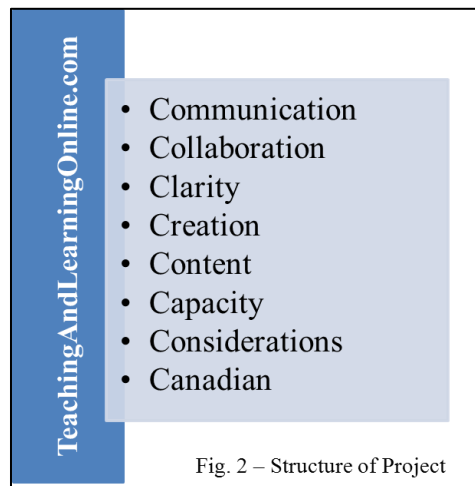
As a culmination of the work researched, compiled and submitted for my three year Master of Education Degree, this capstone represents academic research supported by practical and pragmatic application. The two complimentary parts of this capstone (the paper and the project) work in tandem with each other to offer a comprehensive view from an academic, research-focused methodology, alongside a practical, pragmatically-focused approach. Both pieces attempt to address the essential guiding question: What supports do K-12 educators need when teaching and learning online? Beginning with the filters of Leadership, Technology and Pedagogy, this question will be addressed, referenced and reflected upon throughout the paper. As the result of careful and selective research, the project provides K-12 educators with a toolkit of resources and references; tools and techniques essential to being successful in the online environment. Finally, these two pieces, however interrelated, can act as stand-alone pieces.

Preface

This cumulating capstone is presented in two parts: a Paper and a Project. This paper is submitted in conjunction with the Project, available on www.TeachingAndLearningOnline.com. These two pieces, while covering similar topics, themes and areas of research, are structured in very different ways. The paper is structured around the three pillars of this specific M.Ed. program: Leadership, Technology and Pedagogy (Fig. 1 – Structure of Paper).



Rather than keep similar structure for a dissimilar means of presentation, the project is arranged in a logical way that would appeal to the end-user; the teacher in an online environment (Fig. 2 – Structure of Project).



Acknowledgements

I would like to acknowledge the support of a number of people who have helped me along my journey as I reach this point in my professional and academic career.

My Family: The unending support from my family has allowed me to take on this incredible task. Thank you to my Mom and Dad for their continual pride in every accomplishment. Thank you to Neal for love, support and encouragement. You have been with me through the highs and the lows. This would literally not be possible without you.

My Work: My colleagues from CBe-learn, including the staff and students who have stood by each moment as I explore the practicalities of combining technology, pedagogy and leadership in my daily duties. Thank you to Karen for providing me with mentorship, leadership and professional direction exactly where and when I needed it the most.

My Cohort: Combining the unconditional love of a family, and the solidarity of a colleague, the members of my cohort have been a continual source of strength and inspiration and have allowed me to achieve more than I thought I would be able to. Thank you to Karin for continually raising the bar and keeping me motivated; Travis for reminding me to pause, reflect and look outside myself; and Rachel for providing guidance, companionship and laughter. Our time together has been memorable, meaningful and a true highlight of the past three years.

I think I've finally found the unicorn.

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Introduction

Teaching and learning online is a relatively new educational experience for many. However, my professional experience has allowed me to work as a teacher, Learning Leader and Assistant Principal in an online school environment – and therefore, the entirety of my professional career has been spent as an online teacher, administrator, or in a position where I work with other teachers within this unique environment. I have been part of my school for over half of its current existence (6 out of 9 years), and I recognize that we are on the cusp of significant change. In fact, research predicts that within the next decade “about 50 percent of high school courses will be delivered online” (Christensen, Horn and Johnson, 2008, p. 98). In order to bring online teaching and learning into the next phase of excellence, some specific pieces need to be in place; there needs to be more consistency in teacher development practices and programs; there need to be more conscientious understanding of course / instructional design; and there needs to be a stronger understanding of quality online pedagogy. All of these factors will bring forward a practical and pragmatic way of offering true personalization of student learning.

I have retained a consistent and practical focus throughout this M.Ed. program towards leadership in online K-12 education. I have continued my research and development in this area in my professional and academic career over the past three years, so this is a natural and organic culmination of the work, projects, assignments and research conducted over the course of this program. Throughout the creation of the capstone, I have remained focused on the three pillars of this specific M.Ed. program; leadership, technology and pedagogy. The focus of this paper is to answer the question, What supports do K-12 educators need when teaching and learning online?

Rather than focus on what online learning is and specifically how it differs from other forms of learning (compared to traditional face-to-face learning), my focus is on the exploration and further understanding of the supports that teachers require when teaching and learning in an online environment. There are other studies that effectively report on the state of online learning, including the benefits and challenges, so that will not be my particular focus. Understanding that online learning exists in K-12 environments, in conjunction with the associated project (housed at www.TeachingAndLearningOnline.com), this paper serves to bring forward practical and pragmatic supports for teachers, reinforced by current academic research.

There are many other terms for teaching and learning online, including distributed learning, computer-mediated learning, virtual schooling and web-based instruction. However, for the purpose of this paper and project, the terms used (teaching and learning online) will refer to the tools and techniques employed by any teacher in a K-12 school-based environment using online web-based practices as the primary or supplementary instructional method.

Educators need to make thoughtful decisions about the technologies and pedagogical practices being put into place, and these decisions cannot be made lightly. Online learning has the potential to become a disruptive innovation, which can “fundamentally transform a sector” (Staker, 2011, p. 1). This transition is not easy, and the jurisdiction needs to ensure they are committed to the change. As with any disruptive innovation, at first the new product or service might not be as good as the current practice or product. However, by addressing the needs of nonconsumers, the disruptive innovation will improve little by little and “take over and supplant the traditional way of doing things” (Staker, 2011, p. 1).

With homage to Christensen et al. (2008), Staker (2011) identifies teaching and learning online as a transformative tool:

Online learning appears to be a classic disruptive innovation with the potential not just to improve the current model of education delivery, but to transform it.

Online learning started by serving students for whom there was no alternative for learning—in the advanced courses that many schools struggled to offer in-house; in small, rural, and urban schools that were unable to offer a broad set of courses with highly qualified teachers; in remedial courses for students who needed to recover credits to graduate; and with home-schooled and homebound students.

Nearly all these instances tended to be in distance-learning environments—outside of a traditional school building and in-person teacher. (p. 1)

There are four identified factors that will drive this disruption. First, online and computer-based learning will improve in overall quality; Second, teachers, parents and students will be able to make contentious decisions about learning pathways; Third, an anticipated teacher shortage will require thoughtful and innovative solutions; Fourth, the overall costs associated with online learning will fall significantly as the market and demand increases (Christensen et al., 2008).

This means that teaching and learning online will soon become pervasive across all districts and areas. Teachers have a responsibility to become aware of the changing trends in technology and pedagogy, and school-based and district-level leaders have the responsibility of fostering this change.

To highlight the different skills and knowledge required by any K-12 teacher in an online environment, my research has determined eight significant categories to explore:

communication, collaboration, clarity, creation, content, capacity, considerations, and Canadian contexts. Although the online resource is split into these eight specific categories, the following paper will be designed into three pillars of focus: leadership, technology and pedagogy. To respond to the guiding question, I will highlight the types of support that K-12 teachers require when teaching and learning online: support through leadership, support with technology and support in pedagogy.

Support Through Leadership

School-based administrators have a responsibility to be the instructional leader within their staffs. Although a critical component, this means more than offering the opportunity for professional development on a school-wide level. In order for significant change to occur in teacher practice, it is imperative that the instructional leader provides a detailed, shared and collaborative vision that will foster and encourage student success. In the 21st century, “administrators need to know how the technology can promote learning, be appropriately situated as both a topic of and support to the curriculum, and support whole-school improvement” (Schrum, Galizio, and Ledesma, 2011, p. 244). A staff must have the appropriate capacity to be able to respond to ever-changing trends and technologies. Building capacity within any staff is critical to ensuring successful adoption of technological and pedagogical initiatives. This capacity building ensures that there are core values and skills shared among all staff members. Capacity building usually translates to formal professional development, and informal learning through networks of teachers. There is a need for “structured, required, rigorous teacher development, both in-service and pre-service, for this unique learning environment” (Cavanaugh et al., 2009). Without this structured development, teachers and school staff will continue to use technology, including online resources as they always have. Without leadership, these

technologies “do not supplant traditional teaching; instead, teachers use them to supplement and reinforce the existing teaching model. As such, computers add cost while failing to revolutionize the classroom experience” (Christensen et al., 2008, p. 82).

Support Through Leadership: Capacity

Professional development is a critical component of teaching and learning online. Without continual, job-embedded professional development, teachers would not be able to build their professional capacity, and therefore offer students the best learning opportunities. Technological advancements require on-demand professional development, and just-in-time learning for all participants - teachers and students. Outside of school-based opportunities, there are many formal development opportunities available, including courses that can be attended face-to-face or in online environment. However, it is important to respect the importance of informal networking and relationship-building.

Although K-12 online education is beginning to become pervasive, supports for teachers in this environment are still in the developmental phase. Through their research, Ferdig, Cavanaugh, DiPietro, Black, and Dawson (2009) indicate that previous research into this field pointed towards the similarity between online and face-to-face environments, and focused on translating effective teaching and learning techniques into this new environment. However, that research also recognized the specialized nature of online learning, and the specific skillset that teachers would require. For example, Ferdig et al (2009) highlight that teachers in an online environment need to become comfortable with technology so they can effectively “incorporate the skills of an interaction facilitator and an instructional designer into their role” (p. 481). In addition, the authors specifically suggest teachers need to become adept at telecommunication

tools and techniques that draw upon the most current technologies in order to better meet the needs of online students (Ferdig et al., 2009).

One of the recommendations is to have both in-service and pre-service teachers become better prepared for teaching and learning in an online school education. Ferdig et al. (2009) highlight a study done through the partnership between the University of Florida and Florida Virtual School. The goal of this partnership is to have student-teachers participate in both face-to-face and online internships as part of their requirements for graduation. The results from this project suggest two important findings: “a) most of the in-service and pre-service students had misconceptions about virtual education prior to the experience; and b) after the experience some students saw new roles for themselves as face-to-face liaisons to virtual schools or as full-time virtual school instructors” (Ferdig et al., 2009, p. 497). By offering pre-service teachers the opportunity to intern within an online environment, they were exposed to novel and innovative ways of teaching; something unfamiliar to them from either a student’s or a teacher’s perspective. These opportunities only exist within systems with significant leadership, and a strong understanding of the value of online teaching and learning skills.

Once the pre-service teachers have begun working in an online environment, their specific needs change, and the school-based administration needs to respond to their needs. There are a variety of successful models for coaching and mentoring new online teachers, as highlighted by Wortmann, Cavanaugh, Kennedy, Beldarrain, Letourneau and Zygouris-Coe (2008). Through the exploration of eight successful and diverse models of school-based mentoring and leadership, the authors conclude that the mentorship process, although heavily dependent on the specific school’s culture, is a critical aspect of success. As in many aspects of teaching and learning online at the K-12 level, there is a lack of research and data on the effects

of mentorship on teachers' performance and student achievement. However, the research gathered within each of these eight unique settings truly indicates there is a positive reaction when mentorship models include: "personal and professional reflection, sharing of expertise to others with common interests, portfolio development, learning communities, professional development planning for both mentor and mentee, and short-term collaborations through co-teaching or team teaching" (Wortmann et al., 2008, p. 4). As each school is located within a unique setting with unique challenges, these eight case studies offer the opportunity to customize and personalize a teaching and learning online mentorship program within any K-12 school environment.

Kearsley and Blomeyer (2004) highlight the necessity of training teachers to work in online environments. The authors understand that the nature of pre-service teacher education is changing, and these skills will eventually be taught in teacher preparation courses. However, until that time, it is essential that strong training programs be established to ensure that K-12 teachers are prepared for the complexities of online teaching. Kearsley and Blomeyer (2004) suggest specific certification for teachers who are trained and appropriately qualified to teach in an online environment. They suggest that teacher certification be associated with a set of national standards, such as the National Education Technology Standards (NETS), created by the International Society for Technology in Education (ISTE) (Kearsley & Blomeyer, 2004). Part of the discussion centres around the preconditions required for online teachers. The authors address common questions, such as "Can anyone teach online?" and "Why would anyone want to teach online?" (Kearsley & Blomeyer, 2004, para. 3, para. 6). The authors provided evidence and examples of online workload, teacher professional development requirements and specific strategies required to teach online, including an extensive list of references they have used in the

preparation of their presentations and publications. Understanding that this is still a relatively new field of research, the authors indicate that while we know “quite a lot about online learning, there is relatively little research about online teaching. In particular, issues such as how to assess online teaching abilities and what strategies work best for certain teaching situations aren’t well understood” (Kearsley & Blomeyer, 2004, para. 15). This indicates a need for increasing research and data from those who teach and learn online.

A teacher’s own professional education has three distinct parts: pre-service education, mentorship for beginning teachers, and on-going evaluation of experienced teachers. The Southern Regional Education Board (2006) published a document that is meant to be used as part of a teacher’s periodic evaluation, and has two distinct parts: First, a detailed and categorized checklist that is designed to help assess the online teacher, and determine if they meet the established standards; Next, an annotative narrative section used to highlight specific successes in online education. The checklist is categorized into three parts: Academic Preparation; Content Knowledge and Skills for Instructional Technology; and Online Teaching and Learning Methodology, Management, Knowledge, Skills and Delivery. There is a distinct spotlight on the last category, focused on all of the technical skills and knowledge required for being a successful online teacher and learner. Although designed as “an instrument to evaluate the quality of online teachers of middle grades and high school students”, technology leaders should not necessarily use this checklist as written (Southern Regional Education Board, 2006, p. 4). However, there are a number of innovative ways this checklist could be used. For example, leaders could use it to design a set of specific standards that meet their requirements when analyzing online teaching and learning. Rather than using this as an actual checklist or assessment tool, it could easily be modified to describe best practices in online learning, and used as a planning tool. Alternatively,

it could also be used as a self-assessment or reflective tool for an online teacher, or online Professional Learning Community.

The North American Council for Online Learning (NACOL) presents an organized list of guidelines for online teaching and instructional design, packaged and published as the National Standards for Quality Online Teaching (2006). These standards were strongly influenced by and founded on the Southern Regional Education Board (SREB) Standards for Quality Online Teaching (2006), although they have been re-ordered, re-packaged and combined with other categories from other similar studies and research. This is a prescriptive checklist that uses a five-point scale to rate online teaching, and online school environments: Absent, Unsatisfactory, Somewhat Satisfactory, Satisfactory, Very Satisfactory. There are twelve different categories including prerequisite technological skills, online leadership, online assessment and collaboration with colleagues. There are many critical factors that online administrators, leaders and teachers would need to recognize and address before instigating any changes in their online school. Technology and educational leaders would be able to use this checklist as an assessment tool for current online teachers or as a pre-planning activity when establishing an online school. Although each of the twelve categories are generally given equal weight through this checklist, a leader would be able to make some critical judgements and decide which aspects would be highlighted with the specific school staff. These standards are guidelines, and need to be used judiciously by the school administrators, as the “guidelines should be implemented and monitored by each district or organization, as they reserve the right to apply the guidelines according to the best interest of the population for which they serve” (National Standards for Quality Online Teaching, 2006, p. 3). For example, there are numerous references to state

standards, and this inherent American bias would be easily overlooked, and adjusted to a Canadian context.

Support Through Leadership: Canadian Context

The Canadian context is as important in an online environment as in any face-to-face classroom. Teachers and learners in Canada are faced with unique challenges and opportunities, and their teaching and learning context needs to reflect a Canadian perspective, not just in the curriculum taught, but also in the legal, ethical and cultural framework. The geography of Canada has necessitated Canadian educational institutions to create online alternatives so all students could access high-quality instruction. Canada has many rural and remote areas that are not well served by traditional educational models. For example, if a student on a remote island in BC wants to take an advanced placement science course in High School, he/she can now access high-quality materials and personalized instruction through the use of online classes and technology. This opportunity “gives both rural and urban students in British Columbia improved access, more choice, and flexibility to learn outside classroom schedules” (British Columbia Ministry of Education, 2011, para. 1).

Research into the Canadian K-12 online context is more difficult to obtain, as the field is still in its infancy. However, there have been a few seminal reports published in the past few years that will set the stage for future research and recommendation to all education environments in Canada. In 2009, the Canadian Council on Learning published a comprehensive study of e-learning practices and philosophies across Canada. By suggesting that e-learning is a critical component of the future of education in Canada, this report aspires to inform and engage the audience, while maintaining a specific, Canadian, focus. One method the report uses to

understand the Canadian context is by comparing and contrasting Canadian values of e-learning with other selected countries, such as Australia, UK, Korea, France and the USA (Canadian Council on Learning, 2009). This report highlights the potential benefits of e-learning, including accessibility, flexibility and skill development. However, the report clearly espouses the philosophy that e-learning is a tool that “supports, rather than replaces, other modes of learning” and should act as “a responsive and adaptive tool that broadens, rather than restricts, opportunities to learn” (Canadian Council on Learning, 2009, p. 54).

The *State of e-learning in Canada* (Canadian Council on Learning, 2009) is critical of the fact that Canada does not have a national e-learning strategy, and there are no current plans to create or implement one. The report’s findings suggest the creation of an e-learning “data clearinghouse” where trends can be monitored, targets can be established and evidence can be collected (p. 110). These trends, targets and evidence can then be succinctly communicated to government, education, business and the general public. This report offers teachers and leaders the chance to review national and international policies around e-learning at all levels, as K-12, post-secondary and adult education are covered in the overall analysis, as the authors describe a wide range of “e-learning users—citizens, lifelong learners, students in K–12 (kindergarten to grade 12, or elementary and secondary school) and post-secondary education, workplace managers and human resources specialists, etc.” (Canadian Council on Learning, 2009, p. 34). This offers a broad and comprehensive context of all e-learning across the country through a significant combination of literary and practical research, while offering references to many other reports, researchers and literature that are all directly related to e-learning theory, philosophies and strategies.

Educators in K-12 settings do require specific and systemic support through their instructional and administrative leaders. Through pre-service training and mentorship programs with beginning teachers, leadership is an instrumental component in the ability for teachers and schools to be successful in the online teaching and learning environment. Leadership extends beyond teacher training, and in an online learning environment, it encompasses more than just the local culture of the specific school. In order to approach teaching and learning online in a strategic manner, the educational and instructional leader must understand the broader context of the school board, the provincial agenda, and the overall landscape of teaching and learning online throughout a Canadian context. To this end, the leader must understand the microcosm of the online classroom, as represented within the macrocosm of the education milieu in Canada.

Support With Technology

A fully online school environment is completely dependent on technology as a means of instruction, communication and assessment. The successful use of technology is at the core of the online school's purpose, and without it, the school is simply not able to serve the students. However, even in truly online schools, there have been some movement made towards a more blended environment with face-to-face opportunities for students. "In true disruptive fashion, online learning is expanding beyond its roots in distance learning. Educators and entrepreneurs are increasingly creating blended-learning environments—where rather than doing online learning at a distance, students learn in an adult-supervised school environment for at least part of the time" (Staker, 2011, p. 2). However, the primary focus of these schools will continue to be technology-mediated instruction. The teaching environment of online education is ever-changing. As a school or jurisdiction becomes stagnant, the success of students is put at risk. Research into the best practices in technological use needs to become a key component as

individual schools and school divisions continue to move forward as leaders and pioneers in this emerging field. In addition to exploring the tools currently in place within a specific learning environment, it will become necessary to explore other emerging and innovative technologies for use with students and with teaching professionals. If online learning becomes a “disruptive innovation to today’s brick-and-mortar classrooms” through the “blending of online learning into schools . . . it will transform the sector” (Staker, 2011, p. 165). Part of this transformation involves the continual research and project work, set to explore different presentation and communication tools and strategies, including online presentation tools to create and represent knowledge and information, teacher-created websites, student-focused blogs, wikis and the exploration of social media.

Support With Technology: Communication

As in any educational setting, communication is essential in an online or blended environment. There are many ways to communicate when teaching and learning online. Communication starts at the beginning of the class with clear expectations and guidelines around teacher availability, anticipated response time, class schedules, methods of communication, etc. A variety of communication technologies exist that permit increased access to teachers, and in many cases, help to forge a personal and meaningful relationship between the teacher and the student. Students are more likely to express themselves in a virtual setting or written format, especially if those students are shy or not inclined to ask questions or challenge their teacher in a traditional setting (Yu, 2009). Communication in an online setting can be considered synchronous or asynchronous, depending on the tools and strategies employed, and many forms of online communication can be rich and rewarding, but can carry the sense of anonymity and protection for students who would otherwise remain closed off from teacher interaction.

Yu (2009) described this, using the following metaphor while describing the use of online discussions within a face-to-face teaching environment:

Just as each single snowflake is unique, so is each student that walks into my room. While some enter my class well versed in the art of classroom interaction, others may hold back due to fear and anxiety. Still others may have personalities that are naturally reticent and prone to quiet listening and reflection; they will not speak up. While I can make the learning environment more comfortable for some, I must also honor those who choose to remain silent. Online discussion gives all of these students a voice. (p. 18)

Barbour and Ploug (2009) argue that students in full-time online schools are not provided with the appropriate socialization opportunities to meet and interact with other students “before and after class or in the hallways of the school” (p. 56). Through their study, teachers and administrators at one specific online charter school were able to successfully utilize established social networking sites to engage their learners. The educators at this school created a pilot project to use Facebook and Ning sites to establish an online social presence with students and teachers. The goals of this pilot were to create a space for students to interact academically and socially. Without a physical or face-to-face connection to each other, these online spaces became very important to all students and were consequently used successfully in academic and non-academic manners. Students were given permission to create their own groups, and by the end of the first semester, “119 groups were created ...common interest groups, including theater and literature lovers, web design creators, mixed martial arts fanatics, comic book collectors, and enthusiasts of anime, teen documentary, and film and acting” (Barbour & Ploug, 2009, p. 59). These authors highlight the importance of establishing an online social presence, however, this

can be done in a variety of ways – not just through established social networking sites. Using other tools, including those built into a learning management system, teachers can effectively connect with students in meaningful and personal ways, while fostering the ability for peer relationships to grow through the chance to collaborate.

Support With Technology: Collaboration

Students must be given the opportunity to collaborate and work together, and in the online environment this interaction takes place using synchronous and asynchronous tools. Learning can be enhanced by allowing for students to work together in collaborative groups or teams. Effective learning is collaborative and social, not competitive and isolated. Working with others increases the students' involvement in their own learning, and collaboration with peers can permit a student to share ideas and learning in small or large-group settings. Students can participate in study groups, collaborative learning teams, group problem solving and focused discussions. With direction and focus, online collaboration can be a valuable part to any students' education. Yu (2009) focuses on the impact that online discussions can have on students in face-to-face situations, and indicates that although it is clear that "participation in an online forum is done in solitude . . . it still requires appropriate social guidelines" (Yu, 2009, p. 10). Not just relegated to the virtual classroom, Yu (2009) highlights how online discussion forums can be used to foster discussions within a face-to-face learning environment. In many situations, the inclusion of online tools (including focused and carefully-moderated discussions) can lead students to higher academic achievement. By combining the online component into the traditional classroom, the teacher is able to create a more rich and engaging environment.

Just as students need the chance to work together, so do educators, and many of these tools and techniques are transferable from teacher-to-student to teacher-to-teacher. Collaborating with other educators can be some of the most meaningful and personal professional development teachers can engage in. Social media tools and other communication technologies have permitted teachers to collaborate and network together in ways never before possible. Researchers have suggested that Educational Departments should be permitted to collaborate with other jurisdictions or learning providers to develop and provided online learning programs, rationalizing that through collaboration the best learning environments could be created to allow students “to participate in a supplementary or full-time online learning program” (Lips, 2010, p. 7). Online learning has the potential to revolutionize K-12 education and “dramatically expand the educational opportunities of American students, largely overcoming the geographic and demographic restrictions” (Lips, 2010, p. 1). This work requires jurisdictions to learn from each other and work together in a collaborative manner. Online learning continues to become pervasive, and each educational jurisdiction should either create, or expand their virtual school to allow students to study online full-time (Lips, 2010). Using the Florida Virtual School as a model, Lips (2010) points out the intrinsic benefits to online learning: increased access to high-quality teachers, increased flexibility for teachers and students, improved productivity and efficiency and focus on innovation. If individual teachers and schools are permitted to collaborate in the same ways that students are, by using novel and innovative technologies, then online programs will continue to grow and evolve across country, and internationally.

Support With Technology: Creation

Information Technology, at its heart, is about connecting individuals together. In the online teaching and learning environment, this connection takes many shapes and forms,

including the presence of multi-media pieces within the online setting. The addition of multi-media to online courses is a critical component of creating and establishing a dynamic learning environment: “Online video’s versatility, accessibility, breadth of content, and up-to-date materials afford both instructors and students opportunities to shape and contribute to course content and increase student engagement in classroom discussions and activities” (Sherer & Shea, 2011, p. 58). In addition, the use of teacher-created multi-media can help to foster a positive relationship between the teacher and the student. By using audio or video as a communication tool, in a weekly message, the teacher is making a more personal impact on the student. No longer an anonymous face behind a keyboard, a personal video or audio message adds to the personalization of the course (Sherer & Shea, 2011). These dynamic tools are valuable resources for creating media and graphics for use in online courses. Many are free, or come loaded on new computers. These media files can be saved and archived within a course, or can be sent to students one-at-a-time to provide specific directions or feedback on a particular assignment. Each school jurisdiction - and often different school within that jurisdiction - will have access to a different set of tools. Many tools are appropriate for teachers as well as students to use to create audio, video or multimedia pieces. Whether “in a traditional classroom, an online format, or a hybrid [including online video] provides endless opportunities to enhance lectures, assignments, class discussions, or even exams, while simultaneously developing students’ skills” (Sherer & Shea, 2011, p. 58).

When taking the time to create a video for a K-12 environment, it is important that the teacher-designer is receiving positive and constructive feedback from students. Kensinger Rose (2009) explores the use of teacher-made videos in both an online course, and a blended face-to-face environment. By using videos as a response to student questions, teachers are able to

establish a positive and meaningful relationship with their students. Using videos as a means of “personalizing the course delivery of both online and face-to-face classes in the course management system is viewed positively by students” (Kensinger Rose, 2009, p. 494). There are many ready-available technologies, such as built-in webcams, the iMovie application and the online video hosting service YouTube. In addition to highlighting these tools, Kensinger Rose (2009) makes specific recommendations for online instructors who might be interested in this teaching technique: “Avoid using time specific terminology, stories, or information (like dates, etc.) if you would like to re-use the videos from semester to semester” (p. 495). This highlights the importance of teachers creating their own teaching materials and videos to supplement any text-based material already present within the course – indicating that naturally, teachers need to act as designers. However, most teachers lack a formalized design background, and therefore need the support of experts and exemplars when creating multi-media online content.

Not to be underappreciated, visual aesthetics are important highlights of an online environment. Using a variety of visual examples, Anderson (2009) explains the innate reaction that users (learners) have to online images and formatting of text, font and placement. For example, through the use of specific language and describing bevelled edges and shading, Anderson clearly articulates the impact aspects of design have on the cognitive process that users would go through; “Translation: if it looks like a button, it must be a button” (Anderson, 2009, para. 6). When researching online design, Anderson (2009) references recent studies in psychology that indicate that what users think cannot be separated from what they feel. Referencing a study where two identical machines had their buttons and screens rearranged to a more aesthetically pleasing position, Anderson (2009) highlights that if a user feels more comfortable with the interface, there will actually be fewer performance issues. As a

justification, we all “want those things we find pleasing to succeed. We’re more tolerant of problems with things that we find attractive” (Anderson, 2009, para. 33). Therefore, special attention can and should be paid to the “eye candy”. The leader in an educational environment would be able to use this information to help course creators and designers understand the need to remain focused on the end-users; their learners.

Kuhlmann, through a descriptive ebook (2007) and a continually updated blog (2012) provides the teacher-designer with tools and strategies designed to help the user create and manage an e-learning course in a quick and efficient manner. Although associated with the blog, the ebook is a separate resource, available to subscribers as a download. Through both the ebook and the blog, Kuhlmann (2007, 2012) is primarily addressing a course designer for adult-oriented, corporate training. However, even without focusing on the specific needs of the K-12 environment, or the classroom teacher, this ebook excels at providing specific, practical and efficient strategies and solutions to an online learning environment. The author has an understanding of learning styles, and really focuses on the learner, and not the organizational objectives. Kuhlmann (2007) presents five common Pet Peeves when faced with an online course, and offers solutions, strategies and alternatives when approaching them. There are some excellent, practical suggestions for including audio, video and images in the online course, and the author presents them in a straightforward and uncomplicated manner. For example, describing the benefits of a static image over a dynamic video: “With one annotated screen capture image, you can convey the same information with no video. This keeps the file small and faster to download, and it’s easier to create and maintain if you have to update or edit in the future” (Kuhlmann, 2007, p. 39). Throughout, there is a clear mandate to focus on understanding the needs of the organization, the customer and the learner. These are all sound principles that

translate out of the corporate environment, and into the educational realm. The course designer needs to understand the content and the context of the situation before starting to design the materials. Kuhlmann's ebook, *The Insider's Guide To Becoming a Rapid E-Learning Pro* (2007) has been written in a very authentic and accessible manner, which would allow novice course designers to not feel intimidated by the unknowns associated with a new undertaking, and the educational leader would be able to use this resource as a guide and potential framework for establishing, designing or implementing an online course in the K-12 environment.

The educator in a K-12 online teaching and learning environment will require specific support with technological advancements, including communication technology and course / content design. As social and entertainment technologies become more popular and mainstream, teachers will be able to leverage these tools for their educational and pedagogical purposes. No current teacher has been a K-12 student through an exclusively online program, and therefore, no teacher is inherently and intuitively able to provide contexts for online teaching and learning; teachers need to make thoughtful, contentious decisions about the material they are creating, including consideration of best practices in a digital environment.

Support in Pedagogy

Technological choices should not influence pedagogy –as the teaching and learning need to be at the centre of online education. However, it is important to recognize that teaching and learning online does look and feel different than in a traditional classroom environment. Some of the pedagogical practices are easily transferred, but others do not convert from a traditional environment to an online school. Research indicates that “the direct transference of good instructional practice in face-to-face settings does not always translate to good teaching in online

environments” (Ferdig et al., 2009, p. 495). Therefore, it is important to highlight what successful online pedagogy should be. Poor pedagogy wrapped up in a flashy web-based platform is still poor pedagogy. Teachers need to use the infrastructure and administrative tools and technology as a support for their teaching practices, not as a distractor. The technology should enhance the course content delivery, encourage students to engage with their instructor and with each other, and form only one part of the students’ comprehensive learning plan. These “aspects of technology – like all components of an effective course – should be chosen according to how they help meet the learning objectives” (Henry & Meadows, 2008, para. 22). Even the most well-intentioned technical leader or instructor can misuse new technologies by teaching through an outdated paradigm. Instructors who are simply using asynchronous online learning only to access more information are not about to “improve learning effectiveness. Nor will providing access to free discussions or chats necessarily provide effective learning” (Garrison, 2003, p. 8). Without foundations of strong pedagogical use, any technologies – even online and advanced technologies are simply wasted.

Support in Pedagogy: Content

Content materials and resources are available for specific courses and curriculums. Much of the developed resources are media-rich resources, but are akin to textbooks - just one part of a whole classroom setting. In order to be fully-functional, the course content can be hosted within a Learning Management System (LMS) and include the addition of dynamic and interactive tools, such as discussions, assessments, quizzes, grades and time-management tools. Learning Management Systems (also known as Content Management Systems, Course Management Systems, Electronic Learning Environments or Virtual Learning Environments) “are web based applications, running on a server and accessible with a web browser from any place with an

Internet connection. [Learning Management Systems] give educators tools to create online course websites, and provide access to learning materials” (De Smet et al., 2012, p. 688). Each LMS is a collection of tools that usually includes the opportunity to host course content, communication and assessment. Individual teachers might use some or all of the tools, depending on their specific requirements. Learning Management Systems can be all-in-one resources that host an entire online course and online community, or they can be used to supplement a face-to-face environment in a blended way. A LMS is not a website, a blog or a portal – it is a collection of tools used to support teaching and learning online. It is critical that students understand how to navigate and use the LMS, therefore to foster student success, it is important that teachers give “clear instructions and expectations for the use of the learning management system” (Staker, 2011, p. 73).

Teachers need support in the pedagogical delivery of curricular content. In many cases, online schools are using full-fledged Learning Management Systems, but in other cases, teachers are doing their best without this comprehensive set of tools. In these cases, the tools used are web-based tools, including websites, wikis and blogs. Stavrinoudis and Xenos (2007) published a case study that surveyed 32 students on their use and understanding of two different e-learning systems. It is important to note that neither e-learning system used a Learning Management System, per se, but website-based instruction. The two models explored were either plain HTML-based pages, or pages embedded within frames. The inclusion of screenshots of each of the different scenarios permits the authors to fully explore the visual and aesthetic elements of the online environment while being able to postulate on the functionality of the different systems. The authors determine that to create an effective and engaging e-learning environment, the content creators and designers must address the needs of experienced and inexperienced

users: “Users, especially non experienced ones, prefer the learning material to be structured in more pages which have less and more concise content” (Stavrinoudis & Xenos, 2007, p. 557). An educational leader would be able to reference this study as an example of how design and interface choices do impact student (user) appreciation and accessibility. Once again, research highlights the notion that the technology must not surpass the pedagogy in importance, as designers and teachers must remember that “while constructing such a system, developers must always give greater weight to the issue of learning” (Stavrinoudis & Xenos, 2007, p. 558).

Successful e-learning requires careful attention to the aesthetic concerns and not just a pure focus on the usability and function of the online learning resources and content. Stenalt and Godsk (2006) note the difference between online learning modules and resources, and other non-academic uses of online technologies. Other online tools and software have a strong focus on positive user interactions based on aesthetics; as should a successful online learning program. Because users – in this context learners – are comfortable and accustomed to one type of online interaction, educational institutions have the responsibility to offer courses and materials that meet users’ expectations for current available technologies. This means that students are accustomed to the “every-day-use of the digital media” which then “sets the standard and the users’ expectations towards modern means of communication” (Stenalt & Godsk, 2006. p. 211). Designers and developers of online e-learning should take aesthetical awareness into consideration when planning out the course content and materials. It might not be possible to define the balance between function and aesthetics, however the use of “visual communication, including fonts, colours and pictures, should not be neglected when trying to mediate a message or when trying to attract and hold customers” including students (Stenalt & Godsk, 2006. p. 211). A leader in educational technology would be able to use this study to enhance teacher and

designer practice through an analysis of the current available technologies that students are already accustomed to, and modifying current online teaching practices to become more in alignment with these trends.

On a pragmatic level, Williams (2004) published a resource that contains text-based tutorials and checklists that a course designer might use when planning and implementing a module in an online course. There are seven key principles addressed in these tutorials, split into seven distinct lessons: Analysis, Instructional Design, Interface Design, Development, Online Evaluation, Promotion and Site Maintenance. Planning and mapping out the finished product is instrumental in successful course design, and designers must include “main menu, lessons, pretests, quizzes, course map, help, discussion forums, guest books, events calendar and any other components of the course” (Williams, 2004). Having some course or curriculum design background is necessary for any educational setting, however, online tutorials can contain pragmatic and tangible insights for novice or intermediately-skilled course designers, such as using JPEG files for complex, detailed pictures. Understanding the flexible nature of the online learning environment, it is important to offer clarity and choice to students when designing the overall structure of an online course. It is important that each student needs to be “oriented about where he [sic] is within the course. You may suggest the best path through the course but enable the student to chalk out his/her own path if he/she so wishes” (Williams, 2004). Teachers in the K-12 online environment would find merit in online tutorials because they can highlight specific steps and criteria required when planning out an online course. In addition, leaders or educators who are unfamiliar with online learning or course design standards would be able to use tutorials as a checklist when planning out their own online course, or a staff-based professional development activity.

Support in Pedagogy: Clarity

Students need structure and organization in order to be successful, and this is more apparent in an online environment than anywhere. Students need the clarity of specific instructions and expectations. When teaching and learning online, students need to take responsibility for their own learning; the onus is on the student. However, it is the responsibility of the teacher to ensure the environment is conducive to learning. The instructor is key, as he or she needs to “anticipate where students will go wrong or get lost in the course and either modify the course design to minimize these areas or address these questions with tips, Frequently Asked Question (FAQ) areas or other means” (Henry & Meadows, 2008, para. 39). There are many online tools and strategies available to help course designers with content delivery and course management, including methods to help students remain organized and motivated. All of these tools exist in a traditional classroom, but in an online environment, special care needs to be taken to ensure the communication is particularly clear around the expectations for the teacher and the learner. Researchers have determined that successful online courses have “high, clearly articulated expectations” (Henry and Meadows, 2008, para. 23). In online and blended environments, it becomes critical that teachers are clearly communicating their expectations with students, and following through with encouragement and support. As in other educational environments, “setting high expectations and offering encouragement and support will give the students reasons to work hard and develop good study habits” (Staker, 2011, p. 152).

When focusing on clarity in the online environment, teachers need to focus around the clarity in the expectations set on students, and have a variety of tools and techniques available for their use. Garrison (2003) indicates that thoughtful and purposeful online learning can create a “rich cognitive presence capable of supporting effective, higher-order learning” (p. 1). Rather

than trying to replicate an educational paradigm housed in the face-to-face model, Garrison (2003) suggests that the very nature of the online environment offers new and unique properties. Assuming that online learning calls on learners to be self-directed, and requires them to take personal responsibility for their own learning, asynchronous learning permits students to take “greater control of monitoring and managing the cognitive and contextual aspects of their learning” (Garrison, 2003, p. 5). Educators are then challenged to provide structure and guidance what will support students in their academic endeavours. Online learning offers the potential for students to become more self-directed and self-motivated, but the teachers’ role as guide and facilitator is instrumental in creating the conditions that are conducive to student success.

Support in Pedagogy: Considerations

Pedagogy in an online learning environment needs to focus on one critical assertion: just because we can, doesn’t mean we should. Educators need to be judicious in their choices, including when to offer online alternatives at all. Two education departments have come together to present six diverse perspectives that need to be explored when planning for the inclusion of online classes or online learning in an established education milieu (Ingham IDS & Michigan Virtual School, 2009). Presented as an online flash-based game, this resource allows the participant to review significant questions from each of the six different perspectives, as there are “many people involved in implementing online courses in schools/districts: administrators, technology coordinators, counselors, mentors, students, and parents” (Ingham IDS & Michigan Virtual School, 2009). Picking one of the game pieces allows the user to explore the realm of online learning in a novel, but extensive manner. Once the gameboard has been successfully circumnavigated, the user is provided with a list of additional online resources which highlight some of the key features described in the online game. An educational leader would use this

resource as an alternative, engaging way to better showcase the important features and stakeholders that need to be considered. Broken down to the critical components, this resource can act as a checklist, established by school authorities who have already researched and analyzed the strategies needed to successfully implement online learning in a school district. Before using this resource, the user would have to have a strong understanding of how their specific district would want to implement online learning; this resource does not provide any specific rationales, as it works as a checklist of all the various perspectives to consider.

When planning out an online environment, there are certain considerations that need to be made; some considerations relate to the content that has been created, or to the specific curriculum used, but the most important considerations need to be made to the safety and security of students. These categories need to be at the forefront of the course designer's mind when teaching and learning online – all work done needs to be in relation to these essential aspects. Teachers have a responsibility to keep students' personal information secure and private, even as educational lawmakers “concerned with keeping minors safe from online predators and from exposure to Internet pornography have put pressure on social-networking sites such as MySpace and Facebook to protect underage users” (Davis, 2008, p. 17). In many cases, K-12 institutions are not privy to the same technological resources that are available to post-secondary institutions, where the students are all adult learners. Research and study into the incorporation of Web 2.0 tools into the K-12 environment found educators anticipated a number of concerns, including “protecting passwords, careful and regular monitoring of shared content, checking for accuracy of information and teaching students to judge information accuracy, carefully protecting student privacy, and teaching students to be wary of identity and confidentiality issues” (Norton & Hathaway, 2008, p. 174). In this context, specific consideration needs to be

made for students under the age of 13, as their digital rights and responsibilities are usually different than older students. For example, many online services require users to be at least 13 before setting up an account (Apple 2012, Prezi 2012). This legality requires educators to be thoughtful about the specific tools they are using with their students.

An argument can be made that online learning can be, and in some cases is, better than a traditional education. Ramaswami (2009) focuses on the changing perceptions of online learning, and recognizes the changes that have happened in this field over the past five years are more than just perceived changes. Starting with an understanding of the history of online learning, it is important to emphasize there was a perception that students were placed into online learning because they somehow did not fit into traditional schools. Online education was understood as “a fringe alternative for students whose circumstances or geography prevented them from pursuing the conventional classroom-oriented education” (Ramaswami, 2009, p. 1). Through this analysis of the common perceptions in online education, questions arise whether early virtual schools deserved the suspect reputation – or if there was an overall suspicious misunderstanding of the format. By using specific evidence of online schools, the article highlights the benefits of online learning, and how (in some situations), the education is better suited to the student, as indicated in the “shift from online content being a solution to a problem, to actually becoming a real learning tool that people turn to because it works better, and because it may present topics in a way that you can’t do with chalkboard and textbook” (Ramaswami, 2009, p. 2). By reviewing the short history of online learning, any educator would be able to better understand why certain misconceptions exist within the educational community and general society. By understanding the “dubious beginning” associated with online learning and virtual schools, the educator would

be more adept at presenting their position of the benefits of online schooling (Ramaswami, 2009, p. 1).

Never before has choice been so apparent for all learners and their families. One of the most significant considerations an educator needs to address is this understanding: students and their parents are making strategic choices in their educational opportunities. Through the study of eight different research reports, Smith, Clark and Blomyer (2005) explore and examine online learning in K-12 environments. Through their examination, the authors also offer specific recommendations for schools and education departments to take when planning for the future. The study makes an effort to describe the different types of online schools, including those that students attend full-time, and those that are used as a supplement to a student's "traditional (or face-to-face) high school courses" (Smith et al., 2005, p. 35). This is an important distinction, as the eight different research reports were conducted in a variety of different environments. The authors identify six prevalent themes in the research reports: academic performance; characteristics of successful online students; qualities of effective online courses; professional development for effective online teaching; challenges of online learning; and online learning, school change and educational reform (Smith et al., 2005, p. 67). These six trends were not present in all eight reports, but represent the most commonly discussed aspects of online learning. The authors propose that all eight studies had at least two common themes: understanding the challenges of online learning, and the interplay between online learning, school change and the impact on Educational Reform (Smith et al., 2005). This work is supported by the assertion of Christensen et al. (2008) that online learning has the potential to be a disruptive innovation and that within the next decade, "computer-based, student-centric learning will account for 50 percent" of the seats in secondary schools (p. 102).

Clearly, teaching and learning online has the potential to be transformative, and educators need to be thoughtful in all considerations. Technology integration without pedagogical reflection is a waste of teacher and learner time and resources. To this end, the K-12 educator needs support understanding pedagogical philosophies, and needs to make thoughtful and responsible decisions around professional practices. Careful consideration must be given to the content delivered, and to the clarity in the delivery of that content.

Capstone Project

This paper is one part of the capstone, submitted to the University of Lethbridge in consideration for the M.Ed. degree. The other half of the capstone resides electronically within the website created for this purpose: www.TeachingAndLearningOnline.com. Created using the wiki creation tool Wikispaces, this acts as a resource centre, which is a fully-functional and comprehensive toolkit that is of true value to any educator who is teaching and learning online. Including the content resources, the website also uses a host of adjunct tools, including a Twitter account and embedded links to YouTube videos. The visual identity of the project became important as the diverse collection of tools needed to have a consistent look and feel. To this end, I created a logo for the project, using a standard font and colour scheme (Fig. 3 – Teaching & Learning Online).



Fig.3 – Teaching & Learning Online

When accessing the website, the user lands on an introductory homepage (Fig. 4 – Homepage of www.TeachingAndLearningOnline.com), where the user can immediately access an introductory video that covers the scope and structure of this online resource. The introductory video is placed in a central location, as it serves as the orientation to the whole project, and the user would have a stronger understanding of the project by viewing this one video. The homepage permits users to move to any of the various sections of the website through the use of the hyperlinked text, describing each of the sections in detail.

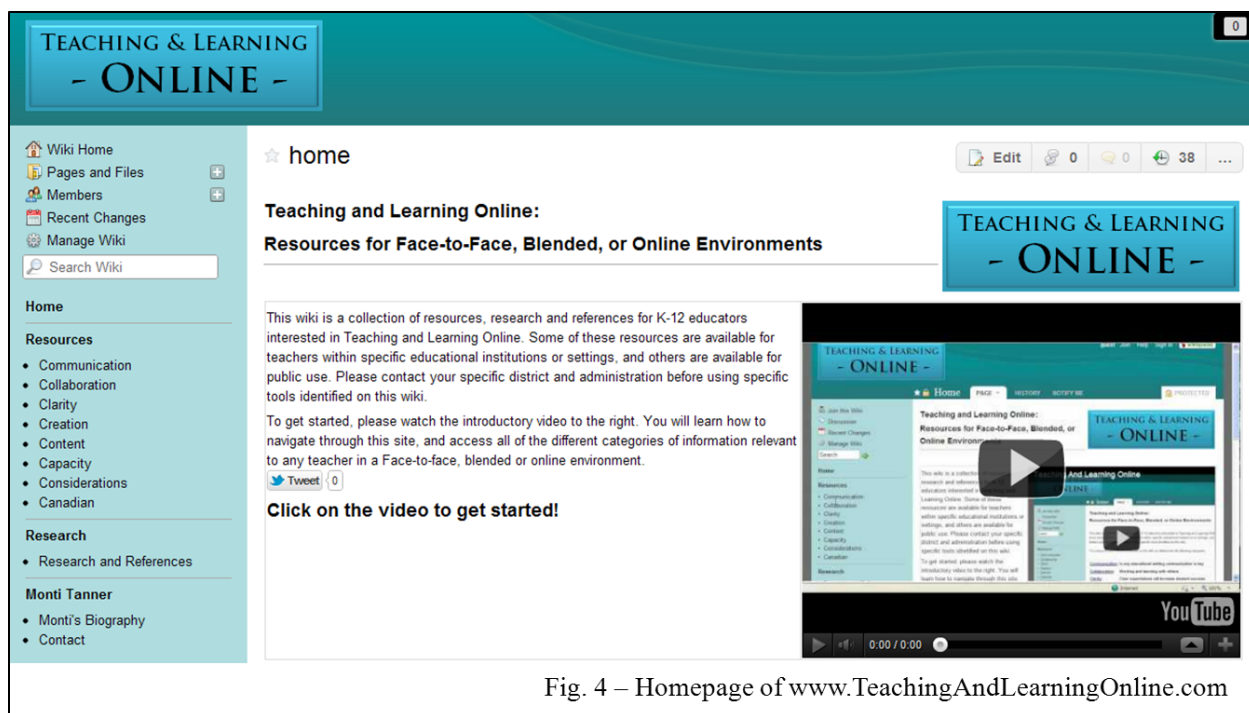


Fig. 4 – Homepage of www.TeachingAndLearningOnline.com

Once on the homepage, the user can navigate through to any of the specific pages (Fig. 5 – Table of Contents). This Table of Contents is consistent on each page, ensuring ease of navigation through the entire website. Rather than focus on the three pillars of technology, pedagogy and leadership, the online resource centre highlights eight key areas: Communication, Collaboration, Clarity, Creation, Content, Capacity, Considerations, and Canadian contexts. This permits the user to jump to any section of particular interest from any of the content pages, or review the whole resource in sequence.



Fig. 5 – Table of Contents

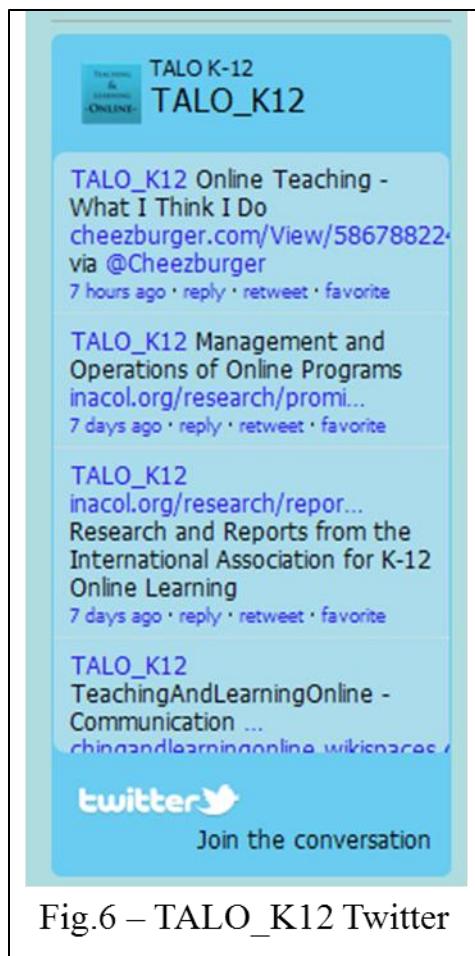


Fig.6 – TALO_K12 Twitter

I have used web 2.0 tools to ensure the content remains useful and up-to-date, as well as to ensure the site is easily shared and promoted. To this end, I have created a Twitter account specifically for this project. The username @TALO_K12 is used to highlight resources and references specifically relevant to Teaching and Learning Online in a K-12 environment (T.A.L.O. K-12). By embedding this Twitter feed onto the homepage, I am able to actively engage dialogue with other interested educators, and provide a way to further extend the reach of these useful resources. (Fig. 6 – TALO_K12 Twitter). This Twitter feed is also used to market the specific content and material to other interested educators, and

acts as a successful communication and collaboration tool.

The majority of the project website is based around the eight key categories, and each of the subsequent content pages are arranged in a similar manner, attempting to ensure ease-of use and understanding by the user. In addition to the links to the Table of Contents (Fig. 5), and the Twitter Feed (Fig. 6), each page has the following components: 1) a title, 2) a description, 3) a video, 4) specific tools and techniques, and 5) references (Fig. 7 – Sample Content Page). Within each page are specific hyperlinks to external sources, resources and references. The pages are also hyperlinked internally, providing access to the annotated bibliographical references, as needed. This ensures there are multiple means of accessing the same information, and that all users will be able to find something practical and useful in their own practice.

**TEACHING & LEARNING
- ONLINE -**

Wiki Home (1)

- Pages and Files
- Members
- Recent Changes
- Manage Wiki
- Search Wiki

Home (2)

Resources

- Communication
- Collaboration
- Clarity
- Creation
- Content
- Capacity
- Considerations
- Canadian

Research

- Research and References

Montl Tanner (4)

- Montl's Biography
- Contact

TALO_K12
TALO_K12

TALO_K12 Online Teaching - What I Think I Do
[Chesburger.com/View/38678822-v8](#)
7 days ago · help · report · favorite

TALO_K12 Management and Operations of Online Programs
[nrcal.org/research/prom](#)
7 days ago · help · report · favorite

TALO_K12
[nrcal.org/research/repor](#)
Research and Reports from the International Association for K-12 Online Learning
7 days ago · help · report · favorite

TALO_K12
[TeachingAndLearningOnline - Communication](#)
Communication and Learning Online
7 days ago · help · report · favorite

Join the conversation


with navigation

Communication

As in any educational setting, communication is essential in an online or blended environment. There are many ways to communicate when Teaching and Learning Online. Communication starts at the beginning of the class with clear expectations and guidelines around teacher availability, anticipated response time, class schedules, methods of communication, etc.

A variety of communication technologies exist that permit increased access to teachers, and in many cases, help to forge a personal and meaningful relationship between the teacher and the student. Students are more likely to express themselves in a virtual setting or written format, especially if those students are shy or not inclined to ask questions or challenge their teacher in a traditional setting.

Online communication is rich and rewarding, but carries the sense of anonymity and protection for students who would otherwise remain closed off from teacher interaction.



(3)

Tweet 0

Synchronous Tools

- **Blackboard Collaborate**
 - Formerly "Eliminate"
 - Online conferencing tool, used as a virtual classroom
 - Voice, text chat, whiteboard, application sharing
 - Sessions hosted as webinars can be archived
 - V-Room (Three for Free), allows up to three users
- **Skype**
 - VoIP (Voice over IP) technology to make audio and video calls
 - Real-time two-way communication
- **Video Conferencing**
 - Groups of participants can share voice and video
 - Can be used to bring an expert into the class
- **Adobe Connect**
 - Like other web-conferencing programs, Adobe Connect
 - Allows for voice, video and application sharing
- **Slidkit**
 - Used for sharing documents, applications and presentations
 - Used in conjunction with other Video Conferencing tools

Asynchronous Tools

- **Email**
 - One-to-one communication tool
 - Institutional-provided, web-based, integrated into learning management systems
- **Discussions**
 - Message boards where students and teachers can interact
 - Open to all users, or to a select group
- **Social Networking**
 - Tools like **Twitter**, **Facebook**, **LinkedIn** and **Google+**
 - Teachers need to be very cautious when using social networking sites
 - Some research has been done in regards to social networking sites
 - Greenhow, C. & Robela B. (2009). *Information and Communication Technology in Education*. 140
 - Kitss, S. M. (2008). *The facebook generation: homework as social networking*. *English Journal*, 98, 30-36.

Research

Barbour, M. and Plough, C. (2009). *Social networking in cyberschooling: Helping to make online learning less isolating*. *Tech Trends*, Volume 53 (No. 4). Retrieved from: <http://www.springerlink.com/content/10.1007/s11028-009-9164-0.pdf>

Through this article, the author argues that students in full-time online schools (cyberschools) are not provided with the appropriate socialization opportunities to meet and interact with other students. The author begins by highlighting some general trends in Cyber charter schools, including the significant growth in enrollment in these types of programs. The majority of the article is focused around one specific online charter school who were able to utilize established social networking sites to engage their learners. The educators at this school created a pilot project to use Facebook and Ning sites to establish an online social presence with students and teachers. The goals of this pilot were to create a space for students to interact academically and socially. Without a physical connection to each other, these online spaces became very important to all students and were consequently used in a successful manner. An educational leader would be able to use this article in support of introducing new Web 2.0 technologies into their learning environment. Although there is a specific focus on charter cyber schools, much of the research and study can be translated to an online public school - in the United States or Canada. The author highlights the importance of establishing an online social presence, and this can be done in a variety of ways - not just through established social networking sites.

Kuhlmann, T. (2010). *The rapid elearning blog*. Retrieved from: <http://www.articulate.com/rapid/elearning/>

The Rapid e-Learning Blog was established in 2007, and currently contains 160 different postings, all related to e-learning course design. Because the author has an educational background, and recently completed his Master's in Educational Technology, it's clear he understands the importance of course design, while focusing on the needs of the learners. Throughout the blog, a variety of topics are covered, including Visual Course Design, Assisting Learners to Remember More, Common Mistakes in Creating Online Quizzes and Tips for Using Audio in Online Courses. Although none of the points are specific to a educational environment, almost everyone can be easily adapted to an online K-12 classroom. Perhaps because of his educational background, Kuhlmann seems to espouse the philosophy to "use what you've got". Many of his examples use common, Microsoft software that most course designers would already be familiar with. His innovative, creative and inspiring uses of PowerPoint emphasize the way in which common tools can be re-imagined and re-purposed. For example, he doesn't just use PowerPoint as a presentation tool, but takes advantage of the included clipart and inherent design aspects to truly use it in place of expensive and inaccessible graphic design software. Many schools and school divisions cannot afford expensive graphic design software, or a team of designers to create new graphics and visualizations for their online courses. However, by using some of Kuhlmann's tips and tricks, teachers can use the software they are already familiar with to create illustrative examples or eye-catching graphics. Although none of his posts focus specifically on K-12 schooling, any educational leader would relish the chance to share these practical and pragmatic suggestions and solutions. Any online teacher or course designer (whether novice or advanced) will benefit from Kuhlmann's expertise in this emerging area.

Yu, S. W. (2009). *The impact of online discussion on face-to-face discussion and academic achievement*. *American Secondary Education*, 37, 4-25. Not just relegated to the virtual classroom, online discussion forums can be used to foster discussions within a face-to-face learning environment. In fact, in many situations, the inclusion of online tools (including focused and carefully-moderated discussions) can lead students to higher academic achievement. The educational leader would be able to use this research to effectively implement a blended strategy into any learning environment. By combining the online component into the traditional classroom, the teacher is able to create a more rich and engaging environment.

1. Title
2. Description
3. Video
4. Specific Tools & Techniques
5. References

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Fig.7 – Sample Content Page

Conclusion

This Capstone represents a culmination of the work I have done over three years in the Master of Education program, and as such, has a strong focus on the three pillars of the program: technology, pedagogy and leadership. When addressing the guiding question, “What supports do K-12 educators need when teaching and learning online?”, the responses are numerous, and varied. However, at the core, educators need support through leadership (by building their capacity through professional development while having a nation-wide focus of understanding), support with technology (by creating content and multimedia pieces for practical communication and collaborative reasons) and support in pedagogy (by ensuring their course content is clearly conveyed to students through appropriate means and being thoughtful to a myriad of considerations, unique to the online environment). The two pieces of the Capstone (paper and project) work in tandem with each other, but are also stand-alone pieces, as the paper can be seen as a thoughtful literature study and review with a specific focus, and the project can be seen as a practical and pragmatic comprehensive toolkit for teachers in an online or blended K-12 teaching environment.

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