

Social Media Pedagogy: A Multiple Case Study Approach

by

Michael F. Nantais

A thesis submitted to the Faculty of Graduate Studies of

The University of Manitoba

In partial fulfillment of the requirement of the degree of

DOCTOR OF PHILOSOPHY

Faculty of Education

University of Manitoba

Winnipeg

This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License



Abstract

Social media are often touted to have the potential to transform education. These media enable students to connect with others from around the world, to work collaboratively, and to share their learning with an authentic audience. The literature offers support, yet raises questions about this promise. The intent of this research was to examine how and why some classroom teachers make use of social media for teaching and to determine if, and how, this changes their pedagogical practices.

A qualitative, interpretivist multiple case study approach was used to tell the stories of nine teachers in a rural Canadian prairie school as they explored and implemented various social media in their teaching practices. A hermeneutic and phenomenological approach formed the theoretical framework guiding this study. The primary source of data was a multi-part interview consisting of conversations held over the six-month study. Participants reflected upon and shared their perspectives as they made use of social media in their teaching practice. Other data sources included a variety of relevant documents such as school plans and online interactions undertaken by the participants. The analysis followed a constant comparative thematic analysis method, providing a rich exploration of the phenomenon of social media pedagogy.

The teachers in this study generally found their use of social media to be a positive experience; however, several challenges and areas of concern were identified. The teachers' reasons for using social media included communication, engagement and motivation, exposure of student work to a broader audience, and collaborative activities. Supports for implementing social media were identified and included good access to working technology and professional learning. The teachers raised concerns such as

privacy, safety, and time constraints. Ethical and appropriate use of social media was seen not only as a concern, but also as an opportunity to teach. Impacts on teaching practice ranged from the addition of strategies to teaching repertoires, to change that could be considered as transformative learning. One of the most significant results was the apparent effect on the school environment. Trust and responsibility were extended to students, and the response was increased communication and connection between students and teachers.

Keywords: social media, educational technology, teaching, case study, social constructivism, change, pedagogy, transformative learning, rural education, grades 7-12

Acknowledgements

The successful completion of this doctoral degree occurred because of the support of many people. First, my advisor, Dr. Orest Cap was always willing to meet to offer advice, support, and encouragement; he is also a genuinely nice person. My committee, Dr. Denis Hlynka, Dr. Marlene Atleo, and Dr. Danny Mann provoked thought, encouraged, and supported. The growth in my program was in no small part because of their pushing me to be the best I could be. Indeed all my course professors at the U of M deserve thanks.

I also must thank the members of the *Transformative Teaching, Learning, and Leading* cohort: Cathy, Danielle, Jen, Lark, Margaret, Natalie, and Pam. It was my privilege to know and work with these intelligent, caring people. We share a deep bond.

My colleagues at Brandon University, in particular, Glenn, Jackie, and Chris, encouraged and supported me, and were there for critical conversations along the way. Of course, the entire faculty of education at BU has been in my corner, and that was much appreciated.

I also must thank my participants. These teachers were true professionals, giving of their time to be part of my study, and always with their students as the main focus.

My daughter, Allison, son, Chris, daughter-in-law, Sarah, and mother-in-law, Bea, were my biggest fans, I hope I have made them proud. Finally, and certainly not the least, is my beautiful wife of 37 years, Helen. She took on more than her share of household chores during the past five years, she scolded me when necessary, encouraged me when I needed it. She was always there for me and much of this success is hers as well. Thank you all!

Dedication

I would like to dedicate this work to several people, all have been, and are still, very important in my life. First, to the memory of three amazing people, who are, unfortunately, no longer here to share in this accomplishment. My parents, Anita and Gordon Nantais were taken before their time; they were loving, hard working people who were loved by many. I know they would be proud of my accomplishment. Also, to my late father-in-law, Malcolm Jolly, a true scholar, and a kind, gentle, man. I know he too, would be proud of his only son-in-law.

Finally, I also dedicate this work to a new generation, my two grandsons, Malcolm and Reid. They give me so much joy and love; they make me smile just thinking about them. I hope that when they grow older, they can look to their *Grampy* and see the value of life-long learning and striving to meet goals. If I can be even a little inspiration to them, I will be a lucky man!

Table of Contents

Abstract.....	ii
Acknowledgements	iv
Dedication	v
List of Tables	x
List of Figures.....	xi
Chapter 1: Introduction	1
Background.....	2
Problem Statement.....	6
Research Questions.....	7
Significance of the Research.....	7
Conceptual Framework.....	10
Researcher's Background and Framework	12
Assumptions.....	16
Delimitations.....	17
Limitations	20
Terminology.....	21
Organization of the Dissertation	23
Chapter 2: Literature Review.....	25
The Sociocultural Nature of Learning	25
Transformational Change?.....	29
What Are Social Media?	34

Digital Educational Technology: Is it Effective in Formal Education?.....	40
Disparate Views	41
Why Disparate Views?	46
Complexities and Challenges	50
Social Media in Education.....	54
Social Media: Affordances for Education	55
Controversies and Concerns	71
Summary	75
Chapter 3: Methodology.....	76
Research Purpose and Questions: Revisited	76
Study Design.....	77
Participant Selection and Consent Process	81
Selection Criteria	83
Selection and Consent Process	85
Data Sources and Collection.....	87
Interviews	89
Documents.....	95
Summary of Data Collection	96
Data Analysis.....	96
Analysis Process.....	97
Validity and Reliability (Trustworthiness)	99
Ethical Considerations	101
Summary	102
Chapter 4: Findings	104

Participant Selection and Data Collection	104
The Context.....	106
Prairie School	106
Technology	108
The Principal	110
The Participants: An Overview	112
Participants' Understandings of Social Media	114
The Data: Participants' Perspectives	116
Data Analysis Procedure	117
Codes and Themes.....	122
Overview of Final Themes	126
Reasons for Using Social Media in Teaching	129
Benefits Realized by Using Social Media	136
Supports Identified for the Successful Use of Social Media	142
Concerns, Barriers, and Challenges.....	146
Ethical and Appropriate Use of Social Media	155
Social Media and Change	159
Summary	167
Chapter 5: Discussion, Implications, and Conclusion	169
Discussion of Findings.....	170
How and why do some teachers use social media as part of their practice?	170
What are some teachers' perspectives of their experience incorporating social media in their practice?.....	176
What factors support or hinder some teachers' use of social media in their practice?	185

Does incorporating social media into teaching lead to change in some teachers' pedagogical practices and beliefs? If so, what is the nature of this change?.....	193
Contributions, Significance, and Implications of the Research.....	198
Contributions to the Literature	198
Implications and Significant Results	199
Implications for Future Research	209
Summary of Findings and Recommendations	211
Findings	211
Recommendations	213
Concluding Remarks.....	215
References.....	220
Appendix A: Letter and Consent Form for Superintendent	247
Appendix B: Letter and Consent Form for Principal	251
Appendix C: Letter, Information Sheet, and Consent Form for Teacher.....	255
Appendix D: Confidentiality Form for Transcriber.....	263
Appendix E: Interview Guideline (Initial interview).....	264
Appendix F: Interview Probes	267
Appendix G: Final Interview Guidelines.....	268
Appendix H: Brief Sketches of Participants.....	271
Appendix I: Word Clouds for Participant Transcripts	281
Appendix J: Research Ethics Certificates	283

List of Tables

Table 1.	Social Media Types and Descriptions	40
Table 2.	Summary of Participants: Years of Experience and Social Media Use.....	113
Table 3.	Initial Codes.....	124
Table 4.	Final Categories (Themes)	125

List of Figures

Figure 1. Technological, pedagogical, and content knowledge (TPACK) model	46
Figure 2. Visual representation of the research context	107
Figure 3. Social media types used by participants.	114
Figure 4. Example of data analysis using Tropes software	119
Figure 5. Example of a word frequency cloud for Frank	120
Figure 6. Summary of themes and connections	128
Figure 7. Summary of reasons for and benefits from using social media	141
Figure 8. Supports for successful use of social media as identified by participants	146
Figure 9. Concerns, barriers, and challenges in using social media	155
Figure 10. Key ideas discussed by participants about the ethical and appropriate use of social media	159
Figure 11. Advice from participants on using social media in teaching	185
Figure 12. Social media: A confusing term. Participants' understandings	202

Chapter 1: Introduction

The Internet is more than a tool, since it creates a space for cyberphilosophical reflection. (Varisco, 2007, p. 7)

Is the Internet more than a mere tool? Is it really changing our world? Changing how we relate to one another? How we learn? Coiro, Knobel, Lankshear, and Leu (2008) asked the question, do technologies change the meaning of literacy itself or are they really just “the latest tools to accomplish social practices common through the centuries” (p. 2)?

We live in a society that is firmly rooted in the digital age. It is characterized by easy access to enormous amounts of information, almost instant communication, and an ability to connect with people from around the world, creating what McLuhan prophetically called the *global village* (McLuhan & Fiore, 1968). Brown (2008) declared that the World Wide Web is a “transformative medium” (p. 194) and the “first medium that honours the notion of multiple intelligences” (p. 194). Weinberger (2011) contemplated how the very notion of knowledge itself is changing. He wrote, “knowledge is now a property of the network” (p. xiii) and that traditional filters for managing the amount of knowledge are changing along with the ability for virtually anyone to publish. The read/write Web (Web 2.0) is now firmly ensconced in social networks, affording people the ability to communicate, connect, and collaborate with others removed by both time and distance at levels never seen before. One rapidly growing and popular manifestation of this trend, one that has implications for education, is called *social media*. This phenomenon has been growing at an amazing pace and has garnered much attention in the popular media (comScore, 2011). What do these new media offer schools and

educators? Apparently quite a lot, thus the focus of this study: an investigation into the adaptation and use of social media in teaching from the perspective of the teacher.

Background

What are social media? *Social media* is a difficult term to precisely define. Taken literally, it could refer to media as diverse as a telephone, email, or Facebook. All are media that can be used to connect people socially (D. Hlynka, personal communication, January 20, 2012). In this study, I defer to the definition developed by Kaplan and Haenlein (2010): “Social media is a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user generated content” (p. 61). Minocha (2009) augmented this description, stating that social software includes a “range of tools which allow users to interact and share data with other users, primarily via the web” (p. 353). Thus, social media can be understood to refer to Web 2.0 applications and services that are based on user-generated content through social interaction. This interaction includes sharing, communicating, and collaborating. Kaplan and Haenlein’s (2010) definition would exclude telephones and other media not based on the Internet; likewise, email is not included as a social medium in this study, since it does not fit the Web 2.0 stipulation. Additionally, social media are not device dependent, but rather can be used on a computer, a tablet, or a smartphone: social media are web based. While a telephone is not considered a social medium, Internet telephony (e.g., Skype) would be, as would web applications such as blogs, wikis, Flickr, YouTube, and Twitter. In light of this definition, an interesting question can be asked: When is social media not social? (D. Hlynka, personal communication, January 20, 2012). We can accept that a web site such as YouTube is a social media site, yet, if it

is used strictly to consume (i.e., watch) video, is it social? A wiki is a web site that allows for collaboration, yet if it is used as a static web site (i.e., as a traditional web site used only to present or acquire information), is it a social medium? The media in each of these examples are considered as “social media,” but they are not being used in an interactive, social way. Thus, these uses do not fit the definition being used for this study. This type of speculation illustrates the complex nature of this topic. Is it the potential of the web site that determines whether it is a social medium, or is it the way in which it is used? I propose that it is a combination of both.

Much has been written about the power of social media, both in the popular literature (Rheingold, 2002; Shirky, 2010) and in educational literature (Derrick, 2008; Greenhow, Robelia, & Hughes, 2009; Razmerita, Kirchner, & Sudzina, 2009; Lieberman & Mace, 2010). Rheingold (2002) speculated that the Internet and mobile technologies have the potential to transform cultures and communities. Changes in areas such as marketing, journalism, entertainment, and everyday communication are evident in today’s society. Political events such as the *Ukrainian Orange Revolution* and the *Arab Spring* attest to the power of the Internet and social media. Can, and will, this change extend to school communities? Some would argue that it already has.

Why make use of social media in education? What can it offer for teaching? Can it make learning more meaningful? When teachers adopt a new strategy or approach, they do so with a reason; often that reason is to enhance learning, or perhaps streamline the teacher’s practice, or simply offer a novel way to approach a topic. The idea that learning is a social act has its foundations in the work of Dewey (1916) and was later supported by the work of Vygotsky (1978/1934), Bandura (1977), Rogoff (2003), and others. Many of

the perceived benefits of social media are related to this premise. Proponents suggest that using social media promotes a more student-centric approach, one in which a teacher acts as a facilitator, scaffolding students as they take part in a community of learners. Such an approach would include opportunities for collaboration, sharing, reflection, and authentic audiences for student work (Ajjan & Hartshorne, 2008; Anderson, 2007; Lieberman & Mace, 2010; Redecker, Ala-Mutka, Bacigalpo, Ferrari, & Punie, 2009; Wang & Hsua, 2008). Bower, Hedberg, and Kuswara (2010) summarized the promise of modern digital technology, including social media, in education as follows:

The open, collaborative and contribution-based nature of the Web 2.0 paradigm and its associated tools holds great promise for the future of education – it appears that there is finally accord between the design of technology and the student-centred, interactive approaches being advocated by contemporary educational theory. (p. 178)

The democratizing potential of the Internet is yet another possible benefit, allowing a redistribution of power, as students become content producers in social spaces that they are already using and with which they are familiar (Rambe, 2011). Indeed, Lei, Conway, and Zhao (2008) contended that technology could “bridge long-standing and powerful social inequities” (p. 37). Can social media help to transform and broaden the worldview of students, in order to create a more socially just world, or will these media just leave them more anxious?

Despite the promise and potential of social media in education, challenges surround their use in schools. Some of the issues include concerns about student safety and privacy, plagiarism, increased teacher workload, and the fear that technology, rather

than pedagogy, will become the focus (Anderson, 2007; Crook, 2008). Amiel and Reeves (2008) further reminded us that “educational technology is not value – or culture – free” and that “neither education nor technology is neutral and unbiased” (p. 33). Whenever we use a technology, things change: often good is accompanied by bad. One only has to look back to the changes brought by technologies such as the printing press, electricity, modern transportation, guns, and bombs to see changes, both positive and detrimental. Postman (1998) wrote, “We need to proceed with our eyes wide open so that we may use technology rather than be used by it” (Conclusion section, para. 2). Ultimately, it is up to us to take control so that we can try to understand the ramifications of technology, rather than, as Postman said, let it “use” us. How can we, then, take control of educational technology?

With the increasing use of social media by youth, some people suggest that it is incumbent on educators to provide instruction on appropriate and ethical use, helping students understand how to navigate the use of these emerging social spaces safely (Greenhow et al., 2009). Such digital literacy may be key:

In a world where social media and digital technologies are shaping the landscape, citizens must increasingly understand how best to consistently use emerging and changing technologies. The digital literacy of citizens will play an important role in fostering critical thinking in the face of information overload. (Policy Horizons Canada, 2011, p. 19)

However, is helping our students understand these media reason enough to make use of social media in schools? While this is a laudable goal, if social media can indeed help to reform education, we need to investigate the media further. Do the benefits outweigh the

drawbacks? Why do teachers make use of social media? What does the use of social media actually look like in a classroom?

Problem Statement

Teachers are beginning to make use of emerging technologies, such as social media, which in turn gives rise to many questions and issues. Exactly how do practising teachers make sense of these new technologies and fit them into sound pedagogy? The purpose of this research was to examine the recent phenomenon of using social media in the classroom for teaching, from the perspective of the teacher. Why do some teachers decide to use social media in the classroom? What problems does media use solve? How do teachers decide which social media to use in their classroom? What are the barriers faced and the supports needed when using social media for teaching? What, if anything, changes in a teacher's practice by using social media? This research utilized a multiple case study approach to examine several teachers as they learned about and explored the use of social media in their practice. The cases, embedded in the context of a single school, tell a rich story, each examining a particular teacher's perspective, delving into his/her experiences and reflections. The teachers in this study have a range of experience with social media: some have used it extensively, while others are neophytes. Since these teachers are located in one school, school-related factors that impacted the practice, as well as perceived effects on the school culture, can be highlighted. This study examined successes, failures, barriers, and other identified factors related to the pedagogical use of social media.

Research Questions

The following research questions were asked to guide the direction of this study:

1. How, and why, do some teachers use social media as part of their practice?
2. What are some teachers' perspectives of their experience incorporating social media in their practice?
3. What factors support or hinder some teachers' use of social media in their practice?
4. Does incorporating social media into teaching lead to change in some teachers' pedagogical practices and beliefs? What is the nature of this change?

Significance of the Research

As the use of digital technology and the Internet become more ubiquitous in classrooms, research into their effects, not just on student achievement, but on all aspects of teaching and learning, are of growing importance. The educational landscape is replete with claims about the benefits of technology on education, including social media in particular. Postman (1998) claimed that technology holds many consequences, both advantages and disadvantages. Research is needed to illuminate the drawbacks, issues, and benefits of using social media in the classroom. Are teachers using these media because it is “the thing to do”? Is the purpose to increase student learning? Is it to model appropriate use of the media? Is it just a novelty – a new way to engage and interest students? Such research is needed and, according to White (2011) should be based on research in actual classrooms in authentic learning environments.

Quantitative studies of Internet and social media use illustrate the tremendous growth of these technologies. For example, comScore (2011) reported increased growth

of social networking sites in Canada for 2010, and Rainie (2013) reported that 85% of adults in America use the Internet. A simple Google search for “social media and education” results in numerous educator blogs extolling the virtues and cautioning about the drawbacks of social media use in education. Searching for popular books about social media on *amazon.ca* results in over 150,000 titles. The volume of academic literature on the topic of social media seems to be growing as well, yet, despite the literature, evidence remains mixed, uncertain, and incomplete (Cuban, 2012). Windschitl (1998) called for researchers to investigate questions about attitudes, values, and beliefs about the role of technology in learning that uses qualitative approaches because they “emphasize discovery of, rather than verification of, theoretical positions” (p. 31). Bower et al. (2010) contended that research is required to examine how teachers select and use available Internet tools that are congruent with their curricula. Cuban (2012) wrote in a recent blog post, “Until more researchers go into classrooms, it will be hard to say with confidence that teacher daily use of computers has changed considerably with abundant access to IT” (para. 6). Similar calls for research into social media, educational technology, and pedagogy are echoed in the literature by academics such as Anderson (2007), Coiro et al. (2008), Greenhow (2009), and Greenhow et al. (2009). Several recent doctoral dissertations have also examined questions surrounding the use of Web 2.0 and social media in education. For example, Ahn (2010) investigated the influence of social networks on teenagers’ social and academic development, Allen (2008) examined the transformative learning potential of Web 2.0 technologies when implemented by teachers, Fahser-Herro (2010) explored student and teacher perspectives and practices using Web 2.0 technologies, Pan (2010) took a quantitative look at factors that predict a

teacher's use of Web 2.0 tools, and Tang (2010) examined a framework for learning with large social networks. This area is so emergent and broad that many questions remain to be asked and much remains to be learned. What happens when a teacher decides to use social media in the classroom? Is teaching, and perhaps learning, transformed? What is gained? What is lost? Does achievement of curricular outcomes increase? Are intangibles such as citizenship and engagement affected? How are relationships and power structures in the school affected?

Some researchers have suggested that one reason for the seeming lack of reform in schools is that the view of the educator is rarely considered (Cuban, 1986; Feng & Reeves, 2003). Changes are instituted, often without the input of front line teachers, yet teachers are often the ones blamed when innovations are not implemented as expected. What is the role of the educator in these reforms? Why do they make use of one particular technology and not another? What types of constraints and pressures encountered by educators, often beyond their control, act to inhibit reforms? Are there factors and supports that can assist the educator in realizing the benefits of innovative practices? What evidence is there that an innovation will actually improve learning? Fullan (2001) pointed out, "Educational change depends on what teachers do and think – it's as simple and complex as that" (p. 116). For these reasons, there is a need to approach the issue from the teacher's perspective.

This research documents several teachers as they planned for, implemented, and integrated various social media in their pedagogical practice over the course of six months of teaching. A qualitative, multiple case study approach was used in order to provide a rich description (Merriam, 2009) of how and why social media are used in

teaching, from the teacher's perspective. This research could be of significant value to educators, school and district administrators, and other educational stakeholders who are considering the implementation of social media in their own context. It is also significant because it uses rich, contextual descriptions to help the reader to understand and interpret what is happening when teachers use social media in their practice.

Conceptual Framework

A researcher must understand his/her paradigm. How does he/she understand reality? How does he/she come to know what is known? What counts as knowledge? What are his/her assumptions and methodological choices? This framework should be described for the reader, not to impose this paradigm, but rather to inform the reader so that he/she may understand the basis of the research (Willis, 2007).

This study documents how some classroom teachers make use of social media for teaching and invites them to discuss if, why, or how, this changes their pedagogical practices. As discussed by Garrison and Bromley (2004), the successful adoption of educational technology is dependent upon the social context. Thus a qualitative interpretivist case study approach is appropriate. The reader is left to determine the generalizability and applicability to his/her own situation (Willis, 2008) by reading the stories of others. Teaching is a multifaceted activity. Understanding the complexities of the educational use of social media in context through the stories of others can help us to understand our own. An interpretivist framework is well suited to an approach that describes and interprets a phenomenon through an individual's perspectives and experiences (Kor-Ljungberg, et al., 2009).

The theoretical framework guiding this work brings several concepts together to investigate the questions guiding the study. The theoretical framework can be described as being constructivist, phenomenological, and hermeneutic. The constructivist paradigm is based on the idea that meaning is subjective and constructed through interactions with others (Creswell, 2007; Willis, 2007); that is, learning has a sociocultural basis. Participants in this study constructed their own reality as they made use of social media in their practice through their interactions with the media and with others within their particular context. This research uses an interpretivist approach, which attempts to “understand the subjective perspectives” (Willis, 2007, p. 6) of the participants who are involved with the phenomenon. In other words, the researcher attempts to understand and “make sense of the meanings that others have about the world” (Creswell, 2007, p. 21). Through a series of in-depth interviews and relevant documents, this study took a hermeneutic and phenomenological approach by examining the “lived experiences” (Willis, 2008, p. 69) of the participants as they explored their use of social media in the context of their teaching. In-depth interviews, with questions that ask participants to describe the phenomenon and their context, are a key method for gathering data in a phenomenological study (Converse, 2012; McCaffrey, Raffin-Bouchal, & Moules, 2012). A hermeneutic phenomenological perspective deals with understanding and interpreting a phenomenon based on the participants’ experiences and context (Kor-Ljungberg, Yendel-Hoppey, Smith, & Hayes, 2009; Willis, 2008). This research examined the context of the participants as they made use of social media. The researcher was involved dialogically in the context through the “to-and-fro of conversation with the participant around the topic” (McCaffrey, Raffin-Bouchal, & Moules, 2012, p. 223). However, at some point,

the researcher must also distance him/herself (Schuster, 2013) in order to “come to a fuller understanding of the phenomenon as experienced by the participant” (Converse, 2012, p. 32). In this way, the context is an important background to the phenomenon of using social media in teaching, as lived by the participants.

In qualitative interpretivist research, participants construct the meaning of the phenomenon through their experiences and perspectives, but “the researcher’s interpretations cannot be separated from their own background, history, context, and prior understandings” (Creswell, 2007, p. 39). A reflexive position is important in a hermeneutic, phenomenological study, so that we “do not take our prejudices for conclusions” (McCaffrey, et al., 2012, p. 224). The researcher’s background informs the conceptual framework for the study. In order to clarify the framework from which I approached this study, a description of my background and the factors that led to this particular study might be useful for the reader.

Researcher’s Background and Framework

No-one is a blank slate, especially researchers.
(Noblitt, Flores, & Murillo, 2004, p. 24)

The topic of this study is of high personal interest, because I also explore these new spaces in my own context as an educational researcher and teacher. My interest in educational technology is career long, from the humble *Commodore PET* to modern tablets and smartphones. Indeed, my interest in technology started at a young age and included studying computer science when I was still in high school and personal computers were unheard of. I have had a long history as a user and proponent of educational technology in my career as a schoolteacher, an in-school technology leader, a

school administrator, and my current role as a teacher educator at Brandon University. I am also very much interested in how others make use of the tools of educational technology, why they use them in a particular way, and how they learn about them. While digital technology may not necessarily lead to pedagogically sound change, I believe that it can help teachers to enhance and transform teaching and learning.

In recent years, I have felt compelled to explore the emerging spaces of social media for myself. This is partly due to my interest in educational technology, but also so that I can become knowledgeable about, and keep current with, the tools that are being used by many students and educators today. In the process, I have become a regular user of many types of social media, including Twitter, Facebook, Instagram, and Flickr, among others. I also blog on a semi-regular basis and include these types of media in the courses I teach. Thus, my knowledge of social media comes not only from reading the literature, but also from my own experience and use of these media. My method of learning about various types of technology, including social media, has been through what might be characterized as “play” or active learning, often through social interactions.

I have also been learning more about the role and importance of sociocultural aspects of learning, or social constructivism, as delineated in the work of Dewey (1916), who proposed that learning must be active and that it occurs in context through interactions with others. Other contributors to theories of social learning include Bandura (1977), Lave and Wenger (1991), Rogoff (2003), and Vygotsky (1978/1934). I use the ideas of social constructivism to guide my own practice, and I undertook this research from that view. My teaching also makes use of the principles of social constructivism: I

encourage my students to explore various technologies and reflect on how they can use them in their own developing practice. I encourage discussion and sharing of ideas. By actively experiencing, reflecting, and discussing with others, students construct their own meaning about educational technology and its role in the classroom.

As I learn and experience more, I often reflect on the changes that I have undergone, and wonder whether they are transformational. That is, have these experiences led to a questioning of my “habits of mind” (Cranton, 2006, p. 23) and subsequent revision of my perspectives? Perhaps so; however, I find it difficult to point to any one dilemma or event that triggered the change (Mezirow, 2000). Was it the use of social media and the connections that I have made as a result? Was it my experiences as a school principal? Was it a change in career? Was it my graduate student experiences? My guess is that my growth is the result of a cumulative and incremental effect of these experiences over time, a developmental transformation as a result of the interplay of various experiences, relationships, and factors as described by Basseches (1984, 2005). I also wonder, how do my experiences compare to the experiences of others?

As I have explored my own use of educational technologies, and social media in particular, my thinking has broadened to wonder about the relationship between these technologies and how we use them in education, and as a part of society. We need to go beyond technological determinism. We have some control over how we use and develop technology: “A technology’s value is shaped by its social construction – how designers create it and how people use it, interpret it, and reconfigure it. It is not an outcome of the technology alone or its potential” (boyd, 2008, p. 12). McLuhan purportedly stated that “we shape our tools, and thereafter our tools shape us” (Lapham, 1994, p. xi). If this is

true, and evidence for it is all around us, we need to ask hard questions and reflect on the effects that digital technology is having on teaching and learning, and ultimately on our society.

When a new technology, such as social media, or strategy for teaching is introduced, how do teachers respond? Is it taken up because it is believed to be the next great solution? Do they simply ignore it? Do they consider its use critically? How and why do they respond? We need to approach the use of technology thoughtfully and become “critical users” (D. Hlynka, personal communication, May 29, 2012). Kahn and Keller (2007) wrote, “Reality should be seen as complex and contested by a variety of forces, rich with alternatives that are immediately present and yet ideologically, normatively, or otherwise blocked from achieving their full realization in their service to society” (p. 432). Kahn and Keller ascribed this view to Friere, who stated that science and technology could be either used to reduce the oppressed to “things,” or could be used “to promote humanization” (Friere, 1970/2009, p. 133). Friere further pointed out that it was “not the media themselves which I criticize, but the way they are used” (p. 140). Such a dialectical view, a view of opposing, contested viewpoints and changes in understanding, can be applied to today’s educational technology. Weaver and Grindall (1998) called such an approach critical techno-mania, which “is concerned with technology’s potential to enhance the process of empowerment emerging from dialogues between students and teachers” (p. 239). This critical techno-mania suggests that we make use of educational technology, but critically, using it appropriately to enhance education. This thoughtful, critical, and purposeful use of technology in schools was echoed most recently by Fullan (2013), who stated, “We will always be uncomfortable

with this dual role: ever appreciative and ever alert to the pros and cons of specific technology usages” (p. 11). It has been these experiences, musings, and interests, developed over the years, that have, in part, led me to this stage in my journey and to this research, and formed a framework for it.

Assumptions

A number of assumptions arose about the possible outcomes of this study. The major assumptions, as I saw them, came from an interpretivist paradigm (Willis, 2007) and from my own experiences. Digital technology is both ubiquitous and personal. In keeping with an interpretivist framework, I expected that the ways that individual teachers used social media would be very contextual. That is, I believed that they would make use of media that they were comfortable with and that solved a particular problem for them. They would also generally adapt the technology to their existing practice (Cuban, 2012). This, in turn, has ramifications for whether the simple act of using emerging technologies, such as social media, can act as a basis for transformational learning. Some scholars have suggested that the use of social media leads to transformational learning (King, 2011; Veletsianos, 2011), and some have conducted studies supporting this contention (Allen, 2008; King, 2002). While it is certainly possible that making use of social media may act as a disorienting dilemma, I expected that any transformation would be more a result of several factors, not just the use of social media. Changes in practice are developmental ones that reflect a dialectical view: change occurs through “constitutive and interactive relationships” (Basseches, 2005, p. 50).

Another assumption arose from my experiences and tells me that teachers use various strategies and tools in their teaching to solve some sort of problem. Based on my experiences as an educator, I thought that the main reason for this use was an expectation that the change would make learning more meaningful for students. While this study looked at the act of teaching, teaching is undertaken to cause learning. While it may be true that teaching does not guarantee that learning will take place, without the hope of resultant learning, teaching is not worth the effort. The two are completely linked. The teacher is also a learner, and the learner can in turn be a teacher, as conceived by Friere (2009/1970). While the two exist in a dialectical relationship, they are also completely intertwined; teaching cannot be truly separated from learning. Thus, I believed that the stories told by the participants would be ones that told of their own learning and of their attempts to help students learn.

Finally, I expected to find a range in the types of social media used, numbers of social media types used, and the frequency of use. It was, and remains, of great interest to understand the many ways that teachers use these sites, how they fit into their pedagogy, and whether they are what Hlynka (personal communication, May 29, 2012) would call critical users.

Delimitations

Several delimitations helped to define and narrow the focus of this study. Firstly, the purpose and questions were confined to exploring and documenting teachers' use of social media in their practice. In order to guide the study, a somewhat narrow definition of social media was used. This definition of social media was based on Kaplan and Haenlein's (2010) description of social media as "a group of Internet-based applications

that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user generated content” (p. 61). Kaplan and Haenlein classified social media by the following characteristics:

- collaborative projects (e.g. wiki, Google doc),
- blogs (e.g. Blogger, Wordpress),
- content communities (e.g. Flickr, Glogster, Slideshare),
- social networking sites (e.g. Facebook, Ning, Twitter),
- virtual game worlds (e.g. World of Warcraft), and
- virtual social worlds (e.g. Second Life).

As discussed earlier, this definition excludes certain media that might be considered *social*, for example, telephones, audio conferencing, and email, as these are generally not considered to be Web 2.0 based – although, as described in chapter 2, there is some disagreement. Still, the definition leaves a wide range of web sites that can be considered. Thus, an important delimitation, on the one hand, is to narrow the focus somewhat by including only social media that fit into the description above, but yet maintain enough breadth to determine what types of social media were being used by teachers, and whether they were being used in a social sense.

Secondly, for this study, the consideration of what is meant by a user of social media is also of benefit. Someone who uses social media can conceivably fall along a continuum, ranging from a user who uses one type of social medium to one who uses several sites. The frequency of use could also be a part of this discussion. A teacher may use one site frequently, perhaps every day, while another uses several sites, but only occasionally. Yet another scenario might see someone use social media, but only

grudgingly. A social media user may also use a particular medium infrequently, but may spend long periods of time on it. Many different scenarios can be considered. Cha (2010) found several factors related to frequency and amount of time spent on social media in his quantitative study of social media use by college students ($N = 251$). Cha found that the strongest factor related to both frequency and time spent on social media is “interpersonal utility,” the use for connecting socially with others (Cha, p. 9). Other factors included ease of use, which affects frequency but not time spent, and privacy concerns, which deter the frequency of use but not the time spent. Age is a factor with younger students using social media more frequently, and escape motive is related to the time spent on social media. While these factors speak to general use of social media, they can provide some insight when looking at how and why teachers use social media. For this study, an attempt was made to find users with a variety of experience with social media use. In particular, I looked for two to three who were just starting to use social media in their teaching, and two to three who were further along in their use of social media in teaching. Conceptualizing a categorization of users would be a complex endeavor; however, a relative comparison is possible. Furthermore, for this study, a teacher who used even a single social medium was considered as a user of social media.

Thirdly, this research was limited to one school site and involved nine teachers at that site. The reason for this restriction was primarily to determine school factors that affected the use of social media by these teachers. It also afforded a convenient way to collect detailed and rich data.

A fourth important delimiting factor of this study was that it was a “snapshot” over a defined period of time, a period of six months. This constraint was an appropriate

time span, since it allowed data collection from teachers over a half-year of teaching, giving time to explore various uses of social media. It also acted to keep the study length reasonable for completion. A possible drawback was that any possible perspective change might not have been evident in the time allotted.

These teacher case studies are exploratory, descriptive, and interpretive, as described by Yin (2009) and Willis (2008). The research was undertaken to shed light on the phenomenon of social media use by teachers. Case study methodology was used in order to reap a rich description so that there might be a corresponding rich interpretation of the cases.

Limitations

Several limitations warrant discussion. Firstly, the results of qualitative, interpretive research are not considered to be generalizable, leaving the individual reader to determine applicability to his/her own context (Merriam, 2009; Stake, 2005). Willis (2007) pointed out that “meaning resides in the context, and it cannot be completely removed from it” (p. 222). In other words, knowledge is situated (Creswell, 2007; Willis, 2007). This multiple case study was certainly contextual. Each individual differed in his/her own pedagogical style and beliefs, and in level of comfort with and reasons for using social media. While not generalizable, such case studies are useful for exploring educational innovations, evaluating programs, and informing policy (Merriam, 2009). Yin (2009) provided examples in which case studies can point to “other cases to which the results are generalizable” (p. 43) or they can suggest new theory or provide support for an existing theory. Thus, although the findings may not be directly applicable to other

situations and different contexts, understanding these cases may inform other educators embarking on such a path, support an existing theory, or open new avenues of inquiry.

A second important possible limitation of this study was that qualitative case studies rely on the experiential knowledge of the participants. Stake (2005) stated, “Knowledge is socially constructed . . . and through their experiential and contextual accounts, case study researchers assist readers in the construction of knowledge” (p. 454). The researcher must use various methods to “tease out what deserves to be called experiential knowledge from what is opinion and preference” (Stake, p. 455). These factors may act to limit the study, although the multiple sources and the in-depth data add to the trustworthiness of the account.

Readers of the research should be aware of possible bias on the part of the investigator (Merriam, 2009). Creswell (2007) said that there must be recognition that the backgrounds and experiences of researchers “shapes their interpretation” (p. 21). Therefore, my background and experiences must be considered. As a result, I have included a description of my background, as described earlier in this chapter. It must be recognized that these experiences and dispositions may lead to bias that may affect this study.

Terminology

This section offers definitions of some key technical terms used in this dissertation.

Blog – A “weblog” is a type of web site that is often used for commentary or news, and for expressing one’s ideas, thoughts, and experiences. It often enables readers

to post responses and carry out a conversation. The information is usually organized with newest entries (posts) first (Wenger, White, & Smith, 2009).

Digital technology – In this dissertation, the term is used to refer to technologies that are based on computers, which use a digital, or binary, language.

Information and Communications Technology (ICT) – This term has been in use since the mid-1990s to “emphasis . . . the integration of telecommunications with computers, along with the necessary software, middleware, storage and audio-visual systems that enable users to create, access, store, transmit and manipulate information” (Sallai, 2012, pp. 9-10).

Micro-blogging – Micro-blogging is a social medium that employs short digital messages, or posts, such as Twitter (Wenger, White, & Smith, 2009).

Social Media – Online social media are based on social interaction, including sharing, communicating, or collaborating with others. Kaplan and Haenlein (2010) described social media as “a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user generated content” (p. 61). Blogs, Flickr, YouTube, Twitter, Facebook, and wikis are examples of social media.

Social Networking Sites (SNS) – SNS are “web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system” (boyd & Ellison, 2007, p. 2). Facebook and MySpace are social networking sites.

VOIP – This acronym stands for “voice over Internet protocol.” It is a combination of hardware and software that facilitates telephone calls, that is, the transmission of voice and video, over the Internet (Wenger, White, & Smith, 2009). Skype and Facetime are examples of VOIP.

Web 2.0 – This is a loosely defined term attributed to O’Reilly Media. It refers to the evolution of the World Wide Web into a read/write medium. Tim Berners-Lee, the founder of the World Wide Web, however, insists that Web 2.0 is just an extension of the original ideas behind the Web. Web 2.0 is based on several principles: it is a service, not packaged software, based on participation and openness, large amounts of data, and the “power of the crowd” (Anderson, 2007, p. 15).

Wiki – A wiki is a web site that allows users to collaborate in creating and modifying content (Grant, 2006). Examples include Wikipedia and Wikispaces.

Organization of the Dissertation

This dissertation consists of five chapters and related appendices. Chapter one is an introduction to the study. It includes relevant background, the statement of the research problem and research questions, the significance of the study, a discussion of the conceptual framework including a brief overview of my background as it relates to the study, a discussion of delimitations and limitations, and definitions of technical terms used in the dissertation.

Chapter two is the literature review. In this chapter, topics related to the research study are examined. These include sociocultural theories of learning, transformative learning theory as it might apply to this study, differing views about technology in

education, and an overview of thought and relevant research on the use of social media in teaching and learning, including an in-depth discussion of the term *social media*.

Chapter three includes a description of the methodology, including case selection and rationale, data collection procedures, data sources, and the analysis process. Consideration of reliability, validity, and ethical concerns complete the chapter.

Chapter four consists of the findings. This includes a description of the school context, a summary of the participants (cases), and a description of the major themes that arose.

Chapter five includes a discussion of the results, including a comparison of the cases, implications, limitations, recommendations that arise from the study, and conclusions.

Related appendices follow and include interview protocols, recruitment letters, and other relevant information.

Chapter 2: Literature Review

The focus of this qualitative study is the teachers' use of social media for teaching. This literature review consists of five major sections related to this purpose. The first is an examination of the sociocultural basis of learning. The second examines transformative learning theory as it might apply to this study. These ideas informed the design of the study and the interpretation of the results. The third section expands on the definition of social media introduced in chapter one. A more detailed examination of these ideas is useful for understanding this study. The fourth section provides and discusses some background about the study of digital educational technologies, and how research about these technologies is often contradictory. This information is given as an important background for the understanding of the study and interpretation of the data. Finally, the last section examines research and thought regarding the use of social media in education. This culminating section provides insight into the postulated affordances of social media in education, some of the controversies about the use of social media in schools, and the results of relevant research in this area.

The Sociocultural Nature of Learning

The idea that learning has a sociocultural basis is foundational to the phenomenon of taking advantage of the affordances of social media in teaching and, by extension, for learning. If we ask ourselves to reflect on our own learning, does the sociocultural nature become obvious? Sociocultural learning theories propose that learning occurs through social interactions and through historical and cultural norms (Creswell, 2007), often mediated by cultural artifacts and tools (Kincheloe, 2005; Rogoff, 2003; Vygotsky, 1978/1934).

Sociocultural learning theory is associated with the work of Vygotsky, Bruner and Bandura, among others (Kim, 2001). Vygotsky (1978/1934) worked extensively to examine the psychological development of children in the early twentieth century. His work, translated from Russian in the latter part of the twentieth century, has been very influential on sociocultural researchers (Rogoff, 2003). As a result of his work, Vygotsky proposed that “human learning presupposes a specific social nature” (p. 88), and pointed to the importance of active learning principles and play in development. These ideas are similar to those suggested by Dewey (1916) in the early twentieth century. In a similar vein, Bandura (1977) postulated that people learn complex behaviours through observation and modelling that result from interactions among “personal, behavioural and environment determinants” (p. 195).

The ideas presented above fit well with a constructivist paradigm. Constructivist learning is explained by Jonassen, Carr, and Yueh (1998) as an approach that:

Strives to create an environment where learners actively participate in the environment in ways that are intended to help them construct their own knowledge, rather than having the teacher interpret the world and ensure that students understand the world as they have told them. (p. 30)

As students learn through observing and interacting with others in various ways, including online, they construct meaning of the world and grow as individuals. Education then, from a constructivist viewpoint, is about “engaging students in knowledge production” (Kincheloe, 2005, p. 3). Rogoff (2003) further pointed out that artifacts of a culture “serve to amplify as well as to constrain the possibilities of human activity” (p. 276) as they are used. Social learning theories are very applicable to social media, since

these media are the new tools of culture and they can be used to generate, share, and interpret user-generated content.

Another aspect of social learning that has relevance to this study is the contribution of Lave and Wenger (1991) who stated that learning is situated and contextual and takes place in a community of practice. They suggested that focus be shifted “from the concept of cognitive process to the more-encompassing view of social practice” (p. 43). While Lave and Wenger’s ideas were not, as originally proposed, applied to formal schooling, they certainly have implications. This is especially relevant when we look at using social media, which often involves creating and participating in communities of learners, or sometimes in affinity spaces. Affinity spaces are online communities in which membership is based on common interest, involves both beginners and experts in the same space, and encourages both individual and collective knowledge (Gee, 2005). Creating and taking part in communities wherein learners collaborate and learn from one another, and from experts in the field, in authentic situations is an idea that may have enormous potential at all levels of education. Social media have the potential to engage students and teachers in such social learning activities.

Several interesting studies have been conducted that show that teachers who are more likely to embrace the use of educational technology as more than an information resource also have a constructivist outlook. In a recent study, Overbay, Patterson, Vasu, and Grable (2010) determined that teachers who used constructivist practices and those who displayed constructivist beliefs were significantly more likely to make use of technology in their practice. The authors contended that, from a constructivist point of view, technology should be used to engage and push students to make meaningful

connections with content and ideas under study. This fits well with Jonassen and Carr's (2000) suggestion that educational technologies are ideal "mindtools" (p. 167) that can engage learners in constructivist learning. Jonassen, Carr, and Yueh (1998) stated that these technologies should be "used as knowledge construction tools that students learn with, not from" (p. 24) as they negotiate meaning. Overbay et al.'s (2010) study involved 22 schools and 474 teachers in North Carolina and used a quantitative survey methodology. The authors stated that those teachers who believed that technology made instruction more student centred were also more likely to use it in instruction.

An earlier quantitative study by Rakes, Fields, and Cox (2006), based on 186 teachers from 11 school districts in a southern U.S. state, and yet another study (Hermans, Tondeur, van Braak, & Valcke, 2008) carried out in Belgium (N= 525 primary teachers), also found a significant correlation between teachers' use of technology in the classroom and constructivist practices. Interestingly, Judson (2004) conducted a study that used both a survey and classroom observations to verify these findings. This study involved 32 teachers in varying grade levels and subject areas. The results of Judson's study indicated that, while many teachers professed constructivist beliefs, the beliefs did not transfer into their practice while using technology. Judson did contend that while the goal of constructivism is not the use of digital technology, use of such technology could enable the construction of meaning by students, depending on how it is used. While these studies examined the general use of digital technology, and although the Judson study did not support the conclusion that constructivist beliefs and technology integration are correlated, constructivist beliefs may still be important for the successful use of social media in education

Transformational Change?

An important concept that has implications for this study is transformative learning theory. *Transformation* is a term that comes up in discussions of educational reform, and often in talk about educational technology. It is sometimes used as a powerful synonym for change. However, Poutiatine (2009) contended that it is not synonymous with change, but is a particular kind of change, one that is discontinuous and that does not “just happen.” Transformative change is voluntary: one must choose to be critically reflective, a requirement of transformative learning (Cranton, 2006).

Kitchenham (2009) made the distinction this way:

Change usually means altering a specific teaching strategy whereas transformation means a fundamental difference in the manner in which a teacher views his or her role as an educator as well as his or her view of teaching and learning processes. (para. 1)

So what, then, is transformative learning theory? How can one tell if transformative learning has taken place? What does transformative learning have to do with digital technology?

The concept of transformative learning is best known through the work of Mezirow, who devised the theory in 1978 after interviewing women who returned to college after an extended time away (Merriam, Caffarella, & Baumgartner, 2007).

Cranton (2006) defined transformative learning as “the process by which people examine problematic frames of reference to make them more inclusive, discriminating, open, reflective, and emotionally able to change” (p. 36). In other words, we all have beliefs and attitudes that we develop as we grow, and often accept unquestionably. Mezirow

(2000) called these frames of reference, which in turn are made up of habits of mind, the assumptions that help us to filter and interpret experience, and points of view, which are expressions of our habits of mind. Mezirow (2000) further stated that we learn in one of four ways: by elaborating on an existing frame of reference, by learning a new frame of reference, by transforming a point of view, or by transforming a habit of mind. Cranton (2002) pointed out that it would be easier and would feel safer not to question our habits of mind or, as Mezirow (1994) put it, to “resist learning anything that does not comfortably fit our meaning structures” (p. 223). However, we sometimes experience an event, or some dilemma, that causes us to question and reflect on a frame of reference, which in turn can cause us to change a habit of mind, or perspective. In such a case, we have undergone transformative learning. These deep changes in perspective can be slow and incremental, or sudden and dramatic (Cranton, 2002; Merriam, et al., 2007).

It should be noted that transformative learning theory is based on constructivist principles and on the concept that learning is social (Mezirow, 1994; Cranton, 2006). Thus, transformative learning involves making meaning of our experiences in reflective discourse (Merriam, et al. 2007). The process of transformative learning was theorized by Mezirow (1991) as a series of ten phases, triggered by some sort of disorienting dilemma. The ten phases are as follows:

- disorienting dilemma
- self-examination with feelings of guilt or shame
- a critical assessment of epistemic, sociocultural, or psychic assumptions
- recognition that one’s discontent and the process of transformation are shared and that others have negotiated a similar change

- exploration of options for new roles, relationships, and actions
- planning a course of action
- acquisition of knowledge and skills for implementing one's plans
- provisional trying of new roles
- building of competence and self-confidence in new roles and relationships, and
- a reintegration into one's life on the basis of conditions dictated by one's new perspective. (pp. 168-169)

Merriam et al. (2007), summed up the ten phases by pointing out four key components of transformative learning: experience, critical reflection, reflective discourse, and action. Several scholars have pointed out the importance of critical reflection and reflective discourse, without which there can be no transformative learning (Cranton, 2006; Merriam et al., 2007; Mezirow, 2000; Taylor, 2007, 2008). Finally, for transformative learning to be complete, there must be some sort of action, be it immediate, delayed, or reaffirming (Merriam et al., 2007).

How can we tell when someone has undergone transformative learning? This is not always an easy task. Cranton (2006) wrote of Taylor's suggestion that data from both the participant's and researcher's perspective are important in researching transformative learning. Taylor (2007) pointed out that the majority of transformative learning studies have been qualitative, using data collection methods such as portfolios, surveys, content analysis of various documents, open-ended questionnaires, scales, and, more recently, creative methods such as photography, video, and collaborative research. One method described by Merriam et al. (2007), and used in studies by Kitchenham (2006) and Allen

(2008), was to analyze interview transcripts, reflective journals or blogs, and other data sources for evidence of Mezirow's ten phases during the coding process. Interestingly, both of these studies examined the use of educational technology as a catalyst for transformational learning.

Over the past decade, transformative learning theory has undergone revision and expansion beyond Mezirow's original cognitive, or psychocritical, approach (Baumgartner, 2001; Merriam et al., 2007; Taylor, 2007, 2008). These new perspectives about transformative learning are listed by Taylor (2008) as follows: psychoanalytical, psychodevelopmental, social-emancipatory, neurobiological, cultural-spiritual, race-centric, and planetary. One particular finding was that the disorienting event that triggers transformative learning could be a series of events or even a cumulative process (Baumgartner, 2001). Could the disorienting dilemma that leads to perspective transformation be triggered by the use of digital technologies, specifically social media, in a teacher's practice, as some scholars contend (Hughes, Guion, Bruce, Horton, & Prescott, 2011; King, 2011; Veletsianos, 2011)?

The idea that educational technology, including social media technologies, can promote transformational learning is a popular one. It may be inferred in McLuhan's proclamation that after we shape the tools we use, they then shape us (Lapham, 1994, p. xi). Is this statement true? When we make use of educational technologies and adapt them for our use, do they then shape us? Is this transformational learning? Several recent articles in a 2011 special issue of *Educational Technology*, 51(2), examined ways that educational technologies can foster transformative learning in teachers (Hughes, Guion, Bruce, Horton, & Prescott, 2011; King, 2011; Veletsianos, 2011). These authors pointed

out that educational technology is often used to make traditional instructional approaches more efficient or enhanced, yet, if used to support pedagogies that are constructivist, more learner centred, and personally relevant, it can lead to perspective transformation in teachers. Girord and Cavanaugh (2001) also wrote about this potential; however, they also stated that while the technology can provide the impetus to change, the teacher is the key to transformation. Can the simple act of using social media in teaching lead to such change?

Several scholars have examined the transformative potential of educational technologies. Cranton and Lin (2005) used their own experiences with technology-mediated teaching in a narrative study, in order to describe how their habits of mind were challenged, leading to a perspective transformation. Mixed methods studies by King (2002) and Kitchenham (2006, 2009) found transformative learning taking place in teachers while they learned about and implemented educational technology. King's (2002) study involved 175 teachers enrolled in graduate level courses in mid-Atlantic U.S. universities. The main findings of this study were that educators experienced a perspective change about their roles as educators (to a more learner-centred approach) and in their worldview of education (more inclusive and expansive). Kitchenham's (2006) study involved 10 teachers from three schools and concluded that teachers do experience perspective transformation as a result of learning to use, adopt, and teach with educational technology.

In her doctoral dissertation, Allen (2008) used Mezirow's theory of transformative learning to determine whether educators using Web 2.0 technologies experienced transformative learning. Her qualitative case study followed five K-12 public

school educators who used these technologies for a period of 90 days. The findings showed that four of the educators experienced transformative learning within the classroom, meaning a shift to more learner-centred, authentic approaches. Out of the classroom, transformative learning (reduced feeling of isolation, reflective learning, etc.) took place in 3 teachers, while the other 2 were in emerging stages of the transformation. Allen's study supports the other researchers' position that educational technologies, including social media, can prompt transformative learning in some teachers.

In promoting transformative learning using educational technology, King (2011) contended that the stages suggested by Mezirow do not form a rigid model, but in fact can be reduced in number for teachers who are learning technology. According to King, "The point is that the model is not rigid. Instead, transformative learning provides a framework from which to examine the changing patterns of thinking, wrestling of cognitive and behavioral patterns, and continuing mental negotiations which adults experience" (p. 7). King suggested instead a supportive framework called a journey of transformation. This journey consists of four stages: fear and uncertainty, testing and exploration, affirming and connecting, and, finally, new perspectives. The ideas suggested by King, along with Mezirow's stages, form a sound theoretical basis to investigate whether our tools shape us, and to what degree.

What Are Social Media?

In chapter one, the definition of social media that was utilized in this study was discussed. It would, however, be useful to examine the meaning of this term further in this literature review. The meaning of terms such as *Web 2.0* and *social media* are difficult to define precisely (boyd, 2007; Greenhow et al., 2009; Kaplan & Haenlein,

2010) and can thus lead to confusion and misunderstanding. Anderson (2007) stated, “Web 2.0 is a slippery character to pin down” (p. 5), in that these terms often mean different things to different people. For example, if you were to ask a computer scientist and a sociologist to explain them, you would probably get different answers. The boundaries between the terms are blurred and the definitions have evolved over time (boyd, 2007). One issue is that some of these terms are often used synonymously. *Web 2.0* and *social media*, for example, are often used interchangeably (Greenhow et al., 2009). Additionally, several phrases are used to refer to very similar concepts, such as “social media,” “social software,” and “social computing” (boyd, 2008). If you were to ask a person what he/she thinks social media is, you might get the answer “Facebook,” which is but one example of one type of social media. Now, some different conceptions of the term are described, before turning back to the definition that was used for this study.

When discussing the different meanings of social software, boyd (2007) wrote, “Regardless of what you think the term should mean . . . the fact is that social software has come to reference a particular set of technologies developed in the post-web-bust era. In other words, in practice, “social software” is about a movement, not simply a category of technologies. It’s about recognizing that the era of e-commerce centered business models is over; we’ve moved on to web software that is all about letting people interact with people and data in a fluid way. It’s about recognizing that the web can be more than a broadcast channel; collections of user-generated content can have value. No matter what, it is indeed

about the *new* but the new has nothing to do with technology; it has to do with attitude. (p. 17)

In this statement, boyd makes the point that social software (social media) is about more than technology. When she pointed out that it has to do with attitude, she was referring to participation and behaviour patterns of users. It is about people, how they adapt and use the technology, not just the technology itself. This gives another dimension to keep in mind as other definitions and categorizations are examined. In her doctoral dissertation, boyd (2008) defined social media as “an umbrella term that refers to the set of tools, services, and applications that allow people to interact with others using network technologies” (p. 92). She also included email in her list of examples, although others do not. This definition is more about technology than was her earlier one, but it does include the key aspect of interactive connection.

Minocha (2009) used the terms *Web 2.0* and *social software* interchangeably and describes them as a “range of tools which allow users to interact and share data with other users, primarily via the web” (p. 353). Again, this explanation refers to online or Internet-based tools, as well as the element of social interaction, which includes sharing, communicating, and collaborating with others.

Ahlqvist, Back, Heinonen, & Halonene (2010) defined social media in terms of three key elements. First is user-created content of many types, second are the communities and networks through which users interact, and last are Web 2.0 technologies, which enable people to interact. This definition takes in technologies, content, and users, bringing it in line with boyd’s (2008) thoughts. In a background paper

prepared for the [Canadian] Library of Parliament, Dewing (2010) described social media as a –

wide range of Internet-based and mobile services that allow users to participate in online exchanges, contribute user-created content, or join online communities. A related term is “Web 2.0,” which Industry Canada defines as referring collectively “to many websites, tools and technologies that enable online interactivity, networking, sharing and collaboration.” (p. 1)

Dewing continued to give examples of the services provided by social media: blogs, wikis, social bookmarking, social network sites, status update services (e.g., Twitter), virtual worlds, media sharing sites (e.g., YouTube), etc. The definition that Dewing provided parallels the definition proposed by Ahlqvist et al. (2010).

Social media can be classified in several general categories. An example of one simple list was provided in Dewing’s (2010) work, described in the previous paragraph. Another, similar, classification was delineated by Agarwal (2011) and is useful for comparison. His scheme includes the following:

- Wikis: Web sites that allow users to collaborate in adding and editing content (e.g., Wikipedia).
- Blogs: Or web logs, are online journals, where people can post news, express opinions and others can post responses, interacting in a conversation (e.g., Blogger).
- Micro-blogging: These sites allow short posts, or message. They usually allow users to follow one another and interact (e.g., Twitter).

- Media sharing: Are web sites that allow users to post content of various types to share and allow others to comment on. Content can include photographs, video and other forms of multimedia (e.g., YouTube, Flickr).
- Social bookmarking: These sites allow the user to tag web sites, share their lists with others. Most allow users to form networks, sharing bookmarks and comments (e.g., Diigo, Delicious).
- Social (friendship) network sites: These are web sites that allow people to keep in touch with friends, post a profile, share interests, events and discuss (e.g., Facebook).
- Social news: These sites allow users to share news with others, usually allowing commenting and tagging of stories (e.g., Digg). (pp. 41-42)

Other classification schemes have been devised, such as Kaplan and Haenlein's (2010) that was presented in chapter one, and again in Table 1 (p. 40). These schemes have differences, but they also share many similarities and help to clarify the meaning of the term social media or social software. They also provide an indication of the depth and variety of social media tools available, more of which seem to be online almost daily.

When comparing the various definitions and classifications of the term social media, three aspects stand out as common elements:

1. They are Internet based. In particular, they are commonly accepted as Web 2.0 technologies.
2. They are dependent on content created by the user.
3. Interaction is integral to their use. Interaction could include sharing, commenting, tagging, and collaborating.

The specific examples and categories of social media delineated also have much in common. While the details may differ, the types of media are almost identical. In chapter one, it was indicated that the following definition of social media offered by Kaplan and Haenlein (2010) would be used in this study: “Social media is a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user generated content” (p. 61). This definition shares the attributes described above. It also discounts some media that can be thought of as social, yet it also provides a way to maintain a focus for the study.

Another aspect of defining social media that is worth considering is the question of the users themselves. What makes someone a *user* of social media? There may be differing levels, and types, of use as well. One person may use one social medium very frequently; another may use several social media sites, yet use them only occasionally. Where does a person sit in the complex continuum of social media use that might be devised? Can we classify them somehow? Furthermore, how and why do they actually use these sites? Do they use them because it is the thing to do, or are they critical users? As Heidegger might ask, what is the essence of social media (D. Hlynka, personal communication, May 29, 2012)? For this study, a teacher was regarded as a user of social media if he/she made use of, or was planning to make use of, at least one social medium, as defined earlier.

Table 1

Social Media Types and Descriptions

Type of social media	Description and example
Collaborative projects	Enable joint, simultaneous creation of content by users. Includes media as diverse as wikis and social bookmarking. (e.g. Wikipedia, Diigo)
Blogs	One of the earliest types of social media. Web sites that display entries, usually in reverse chronological order, in which the user can express opinion, ideas, news and so on. Others can usually interact with the author via comments. (e.g. Blogger, Wordpress)
Content communities	These are web services in which users form communities for sharing various types of content, from photographs to video. Interaction usually takes place by commenting on user's contributions. (e.g. YouTube, Flickr, Slideshare)
Social networking sites	These sites are communities where each user creates a profile and connects with friends. The purpose is to share messages and other types of information and media. (e.g. Facebook, MySpace)
Virtual game worlds	A platform, usually three-dimensional worlds, in which users appear as some sort of avatar and interact in an online game-like situation. (e.g. EverQuest, World of Warcraft)
Virtual social worlds	Another type of online virtual world, in these worlds, behaviour and actions are chosen more freely than a game, usually in a more real life fashion. Once again an avatar represents the user. (e.g. Second Life)

Note. Adapted from “Users of the World, Unite! The Challenges and Opportunities of Social Media,” by A. M. Kaplan and M. Haenlein, 2010, *Business Horizons*, 53(1).

Digital Educational Technology: Is it Effective in Formal Education?

*A technology's value is shaped by its social construction —
how designers create it and how people use it, interpret it, and reconfigure it.
It is not an outcome of the technology alone or its potential.*
(boyd, 2008, p. 12)

A broader examination of research into the use of computer technology in schools provides a context and perspective that could prove useful before looking at specific

examples of the use of social media in schools. Thus, this section provides a brief look at some of these results and general trends, illustrating the variety of conclusions, in order to give the reader a sense of the prevailing viewpoints. Some reasons for these disparate views are provided, which in turn may help to frame the literature related to the use of online social media. The focus here is on digital technologies, that is, the use of computer-based technologies.

Disparate Views

Discussions and debates on the promise of various educational technologies in schools have a long history. Cuban (1986) looked back on the history of educational technology and noted that the use of technologies in education, including radio, television, and computers, has produced a long history of disappointment. Despite the promise of each technology, the uptake proved disappointing to many (Cuban, 1986). McCormick (2004) found that studies in the U.K. in the nineteen-nineties and early in the first decade of the twenty-first century also showed mixed results when looking at achievement of outcomes. Such findings are echoed by Alibrini (2007), who pointed out that although computer technology has changed society, in education “the impact of computers and their related technologies have been minor” (p. 227). These results have led to backlash against teachers and administrators, who were sometimes seen as the reason that the promise of technology went unfulfilled. Alibrini (2007) wrote, “teachers’ resistance to the change that computer technologies may bring to their teaching practices is a phenomenon well documented in educational research” (p. 232). This backlash is not new, Cuban (1986) pointed out that one of the issues was that reformers considered “teacher reluctance as an obstacle” (p. 6), rather than attempting to examine the teachers’

perspective. Dexter and Anderson (1999) agreed, stating that the idea that technology could act as a spark for change ignored the role of teachers' beliefs in the process. Rather than viewing teachers as the problem, research about their perspectives is required.

Do teachers see the technology as necessary? Is it seen as another fad or a novelty? In short, why do some teachers make use of a technology while others do not? Perhaps Cuban's most cited work is his 2001 book *Oversold and Underused*. In this book, he wrote about his extensive case studies of computer use in schools in California. Cuban (2001) concluded that the money spent on putting technology into schools had not led to substantial improvement, finding that although there were computers in the schools, they were not being used, and when they were, it was not effective. In the book's conclusion, Cuban (2001) wrote,

Without attention to the workplace conditions in which teachers labor and without respect for the expertise they bring to the task, there is little hope that new technologies will have more than a minimal impact on teaching and learning. (p. 197)

The observation that the teacher's point of view is often ignored, was later reiterated by Feng and Reeves (2003).

Another early critic of computers in schools was Todd Oppenheimer, who, it should be noted, was not an academic researcher, but a journalist. In 1997, he wrote a piece in *The Atlantic Monthly* in which he stated that there was "no good evidence" (Oppenheimer, 1997, p. 1) that computers improve teaching and learning. In their review of the literature, Ertmer and Ottenbeitt-Leftwich (2010) supported this earlier contention when they pointed to several studies from the last decade that indicated that computer

technology had not resulted in high levels of achievement. They proposed the rationale that computers are used to “support traditional, teacher-directed instruction” (p. 256) rather than more learner-centred, constructivist approaches. This suggestion was also made by Alibrini (2007), who contended that the less than successful use of computer technology was because a corresponding paradigm shift from the industrial model of education did not accompany the integration of computer technology. More recently, Fullan (2013) also reiterated that the returns from educational technology have not been evident. Fullan postulated the reasoning that too often technology is implemented without regard to what he terms the “new pedagogy” (p. 2) or knowledge of change. Whether this is the case or not remains a matter of debate.

Some of the viewpoints and research that are critical about the effectiveness of technology were written in what could be considered the infancy of the World Wide Web and the still evolving Web 2.0. Certainly the rapid advances in technology, as even now we are experiencing the dominance of mobile devices, may render current debates obsolete. Nevertheless, the lessons from these arguments remain important considerations when we integrate new technologies into schools. Another question about the state of this research would be about the criteria used for determining effectiveness or efficiency. Was it achievement on standardized tests? Was it engagement? Was it so-called return on investment (ROI)? Was it achievement in creative or critical thinking? In other words, what exactly is being measured, and how (Bebell, Russell, & O’Dwyer, 2004)? Such questions need to be asked when interpreting the research. Opinions and research that are critical of digital technology are continually being debated. Arguments now include the suspected negative effects of the Internet, such as a loss of concentration and decreased

sociability (Carr, 2010; Turkle, 2010), and the suggestion that money spent on technology could be better spent elsewhere (Cuban, 2001; Schneider, 2011). Other important debates revolve around the issues of distraction, freedom, empowerment, equity, and commercialization (boyd, 2008; Bromley, 1998; Fullan, 2013). Such issues should not be ignored. These debates need to take place so that we move forward with deliberate thought and consideration.

Proponents of digital technology in education, on the other hand, point to evidence that such technologies do, in fact, have a positive effect on teaching and learning. Once again, the criteria for judging effectiveness must be kept in mind when reading and evaluating such reports. In a survey of research supporting the value of digital technology, Chen (2010) stated that the evidence shows “how teaching and learning are undergoing wholesale transformation” (p. 137). This view, that educational technologies, including Web 2.0, can lead to deep change, thereby transforming education, are espoused by many scholars (Brown, 2008; Conceicao, 2002; Greenhow et al., 2009; Rogers, 2011). In addition, numerous reports, such as those from *BECTA* (Crook, 2008), the *Canadian Council on Learning* (2009) and *Horizon Report* (Johnson, Adams, & Haywood, 2011), as well as special issues of periodicals such as *Converge* (Kelso, 2011), focus on the potential of educational technology. Of course, the reader should remain cognizant that some of these latter sources have special interests as sponsors, so there may be an inherent bias. Jacob’s book, *Curriculum 21*, contains a number of essays in which various authors argue for a new approach to curriculum and schools. Most of them involve the integration of new digital technologies. New, innovative approaches to education are also echoed by Fullan (2013), as mentioned

previously. We also have authors from disciplines outside of education who proclaim in popular literature that we must embrace new technology for many reasons, including that the skills will be needed for future careers and that we must use new technology to meet modern students on their terms (Tapscott, 2009; Prensky, 2011/2001).

Palfrey and Gasser (2008) provide a balanced and purposeful way to view the use of educational technology. Simply stated, this is the view that digital technologies do have a place in schools, but that place is to meet the goals set by educators. The technology must serve a purpose, or solve a problem, and enhance educational goals when and where it can. Palfrey and Gasser (2008) explained it this way, “This is the hardest job that teachers and principals may face: how to avoid the trap of shunning the technology, on the one hand, and embracing it in places where it does not belong, on the other” (p. 247). This moderate view puts learning and pedagogy first, but does not rule out the integration of digital technologies in a pedagogically sound way. Sutherland et al. (2004) also concluded that there is a need for students to work with both digital and non-digital tools. Thought and consideration are needed to use digital technology in an appropriate manner.

An extension of this idea is exemplified by the technological, pedagogical, and content knowledge (TPACK) concept as proposed by Mishra and Koehler (2006). This model, illustrated in Figure 1 (p. 46), suggests that good teaching depends on the intersection of three types of contextual knowledge: content, pedagogy, and technology. Mishra and Koehler postulated that certain technologies have affordances that make them more pedagogically applicable to some contexts than others (Schrump, Thompson, Maddux, Sprague, Bull, & Bell, 2007). In many cases, planning begins with the digital

tools and resources, when it should start with the context or goals, before appropriate technologies are chosen to support the pedagogy. Of course, this perspective implies that teachers have a knowledge of which digital tools are available (Harris & Hofer, 2009, 2011). The careful integration of digital technologies is a reflection of Weaver and Grindall's (1998) conception of critical techno-mania, described in chapter 1.

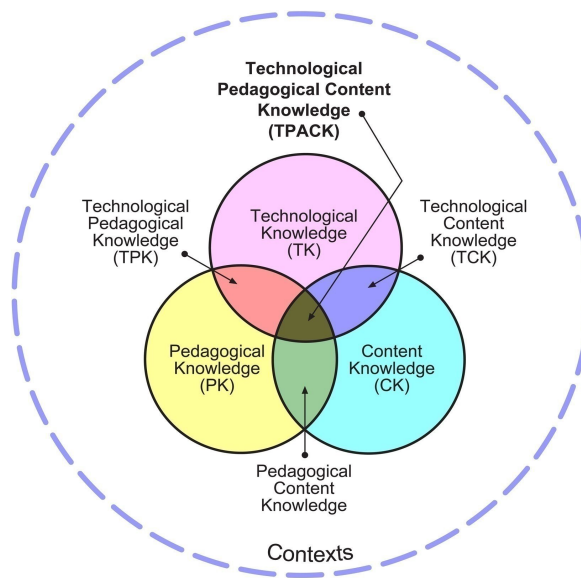


Figure 1. Technological, pedagogical, and content knowledge (TPACK) model. (Reproduced by permission of the publisher, © 2012 by tpack.org)

Why Disparate Views?

The previous section examined a variety of thoughts about the use of technology in schools. On one extreme are those detractors who assert that technology does not have any effect on achievement, and even has dangers. On the other extreme are proponents who warn that we must use these tools because otherwise students will disengage and be ill prepared for their futures. In between is a more thoughtful, dialectical approach, the idea that educational technology has a place, but that place should help us to realize

certain goals and must be used appropriately with critical thought and with context in mind.

One explanation for the varying and contradictory views described above, and probably any dichotomous position, is provided by Willis (2008). He suggested that we, as humans, are self-confirming and “tend to find what we expect to find when we select research that warrants our attention” (p. 11). Similarly, Weinberger (2011) asked, “How much of what we know depends on what we would like to believe” (p. vii)? Many scholars, including Creswell (2007) and Willis (2007), have contended that all research is subjective. The researcher always has a set of beliefs that shapes her/his research. Credible research is important in order to gain insight about educational technology, but “the way in which research issues are framed plays an important role in the results obtained” (Schrum et al., 2007, p. 456). When interpreting research in such a complex area as education, the context, the researcher’s framework, and indeed the reader’s own viewpoint, need to be considered.

Confounding thought about research into the use of educational technology and the effects of media on learning is the contention by Clark (1983, 1994) that media does not affect learning. Clark (1994) argued that it was the teaching method that affected learning, and not the medium used, stating that “any necessary teaching method could be designed into a variety of media presentations” (p. 22) and that “learning is caused by the instructional method embedded in the media presentation” (p. 26). Clark (1983) suggested that research that compares media should not be conducted, claiming that such studies will “confound medium with method of instruction” (p. 451). These contentions certainly had ramifications for the study of digital technologies in education. Clark was

not, however, without critics. Scholarly debates took place throughout the latter 1980s and 1990s about this issue.

One of the main rivals in this debate was Kozma (1991, 1994). Kozma (1991) countered Clark's claims by contending that "various aspects of the learning process are influenced by the cognitively relevant characteristics of media" (p. 28) and that "medium and method have a more integral relationship; both are part of the design" (p. 29). Kozma (1994) claimed that halting research into this area would harm the understanding between the capabilities of a particular medium and learning, because "understanding how learners interact with and use the unique capabilities of each medium's format is essential to understanding the effect of media on learning" (Conclusions section, para. 1). Cobb (1997) attempted to reconcile the two positions by suggesting that media might affect learning if efficiency included cognitive efficiency, rather than economic efficiency, as touted by Clark (1983, 1994). In this way, the medium could affect how something is learned. That is, it could affect the efficiency of learning. This contention agrees that many types of media can deliver the same instruction, as Clark posited. However, it suggests that certain media might make it more cognitively efficient or "less effortful than another" (Cobb, 1997, p. 25). Thus, in Cobb's view, the "form in which the information is presented can determine how it is processed in a mind, and hence how it can be learned" (p. 27). Debates, such as the one briefly described here, also had an effect on the direction and interpretation of research into the use of educational technologies.

McCormick (2004) made the observation that much of the research into educational technology is usually focused on finding out whether ICT can improve the efficiency and/or effectiveness of traditional approaches to teaching and learning. Instead,

McCormick suggested that it might be “more productive to explore what ICT can *add* [my emphasis] to learning” and “extending the capabilities of students” (p. 160).

McCormick was not alone in making this suggestion, as other scholars have made similar observations. Recently, Hughes, Guion, Bruce, Horton, and Prescott (2011), Schrum et al. (2007), and Veletsianos (2010, 2011) conjectured that educational technology is often put into the role of enhancing traditional pedagogies that are based on teacher-centred didactic instruction. These authors called for research that looks at ways that emerging educational technologies can provide opportunities to transform education by moving towards a more learner-centred pedagogy.

This view is tempered somewhat by Sutherland et al. (2004), who argued that expecting ICT to transform teaching and learning through the introduction of new pedagogies is a “utopian vision” (p. 413). Sutherland et al. stated that we must not ignore basic theoretical aspects of learning, in particular sociocultural theories of learning. They added that there is a need to shift from “individual knowledge to collective and shared knowledge” (p. 419). While these two views seem at odds, they are really making similar statements. Educational technology alone cannot transform teaching and learning. To be successful, it would seem that educational technology cannot simply be “bolted on” (Sutherland et al., p. 423) and good things be just expected to happen. Sutherland et al. explained, “Knowing how to use these tools to transform learning in schools is not so straightforward. This is because new ICT tools often challenge an existing practice of teaching and threaten a well-established knowledge domain” (p. 424). Changing existing practice is difficult, often requiring a shift in paradigm. If educational technologies are expected to transform teaching and learning, they can hardly do so if they are simply put

into place and used as a supplement to existing practice. Education as the transmission of knowledge does not change just because a new technology is introduced.

Complexities and Challenges

What, then, are some of the complexities and challenges involved in introducing digital technology into education? Questions of equity and access to technology are two important issues to be considered (Greenhow et al., 2009; Sutherland et al., 2004). The digital divide might be closing, yet, if even a few students do not have access, they are presumably at a disadvantage. As a result of their case study of computer use in an urban elementary school in the U.S., Garrison and Bromley (2004) found that the social context has an important effect on shaping the use of educational technology. The relationships and power struggles among teachers, students, and other stakeholders affect the use of technology in a school. Garrison and Bromley pointed out that in the particular school that they studied,

A shortage of resources created an impossible situation in the school that virtually necessitated treating computer access as a privilege with which to reward or punish. Everyone (within the building, that is) knew it was done, knew it was destructive, and knew it couldn't be helped. The only way to maintain one's sanity in such circumstances, and continue carrying on the work of the school, was through an implicit pact not to see that computer access was being used as a reward, and withdrawn as a punishment, every day. (p. 609)

With limited access and complexities in the social context of the school, the technology had little positive impact on learning.

Other complexities voiced in the literature include technical difficulties and support, teachers' lack of confidence and skills with the technology (Sutherland et al., 2004), and teacher perspectives and beliefs about technology use and teaching style (Greenhow et al., 2009; Sutherland et al., 2004). Safety and privacy issues, including cyberbullying, are also of concern to educators and parents (Crook, 2008), especially with the use of social technologies. This brief listing gives a sense of the many issues faced by educators when integrating digital technology. The extent of these issues and how they are handled could have a large bearing on the success or failure of educational technology initiatives.

In addition to the challenges of actually using educational technology in schools, a number of academics call for a critical approach to educational technology. "Critical" can be interpreted in several ways. Hlynka and Belland (1991) suggested that the study of educational technology includes three paradigms: quantitative, qualitative, and critical. Their concept of critical inquiry includes several approaches, from deconstructionist approaches to critical in the sense of art or literary criticism. Postman (1995) wrote that technologies in schools are "Faustian bargains, giving and taking away" (p. 41). He exhorted us to pay attention to technologies, to discuss and examine them carefully. This same message came to us earlier from McLuhan, who told us that "the medium is the message" (McLuhan, 1994/1964, p. 7), meaning that the medium itself can have large effects on how we do things. We must use any technology with our eyes and minds open, examining its effects critically.

McLuhan's culminating work gave us a tool that can help in the critical analysis of educational technology. The four laws, or "tetrad," ask four questions about media (McLuhan & McLuhan, 1988):

- What does it enhance or intensify?
- What does it render obsolete or displace?
- What does it retrieve that was previously obsolesced?
- What does it produce or become when pressed to an extreme? (p. 7)

These four laws of media can help us to interview educational technology, in order to "reveal the totality of individual and socio-cultural effects" (Adams & Thompson, 2011, p. 10) in "an effort to tease out unusual textures and the hidden trends" (Adams & Thompson, p. 11). Bosman and Zagenczyk (2011) offered another, similar, tool for analyzing the potential benefits of a technology, such as social media. They recommended that the strengths, weaknesses, opportunities, and threats associated with the media be examined by means of the acronym SWOT analysis. This would bring the educator to a better understanding, using critical thought to make the most appropriate decision about using the media.

Bromley (1998) presented another use of the term *critical*. He discussed the image of a computer as a symbol of power. He contended that a common assumption is that the technology will equally benefit all students; all that is needed is to put technology into schools. Countering this assumption, Bromley (1998) stated,

Far from being neutral instruments, computers, like other technologies, are involved in many ways in the construction and use of power and control; in the

way they are designed and built, in how they are sold and to whom, and how they are used. (p. 2)

Bromley therefore urged us to look at power relationships, to consider the type of knowledge that is valued, and which people benefit at the expense of others.

One consideration, mentioned earlier, is the digital divide, which in its original use, referred to access to computer technology. Warschauer (2003) has written extensively on the topic, and while access and use has increased dramatically (Coiro et al., 2008), a digital divide still exists, even in developed Western countries such as Canada. The concept of a digital divide has changed, however, from the original conception of simple access to now include computer skills, literacy, connectivity and social inclusion (Rodino-Colocino, 2006; Selwyn, 2004; Warschauer, 2003). Could, and indeed should, schools contribute to closing the divide, providing access and teaching media literacy skills? Coiro et al. (2008) pointed to instances wherein schools either do not have funding to purchase equipment or are under other pressures, such as increasing standardized test results, which end up “denying online . . . experiences to students in the most economically challenged school districts,” and “the cruelest irony of this . . . is that the students who need to be prepared the most at school . . . are precisely those who are being prepared the least” (pp. 8-9). Issues of equity of use and access to social media, if they are important to civic engagement, opportunity, democracy, and participation, must be addressed.

Implementing the use of digital technology in schools is fraught with issues, including access, funding, teacher beliefs and attitudes, training, and mixed results in terms of successfully increasing learning. Such issues and concerns are important to

consider and address when attempting to implement the use of new technology, such as the tools of social media.

Social Media in Education

*Educational technologies become more than
simply an independent variable in a study of student learning.
Integrating technologies into the classroom leads to substantial changes
in social organization, student-teacher relationships, and a myriad of other factors.
(Amiel & Reeves, 2008, p. 35)*

The statement opening this section is reflective of the thinking of many educators and scholars (see Bower et al., 2010; Greenhow et al., 2009; Hughes et al., 2011; McCain & Jukes, 2001). What does the literature tell us about the potential of social media and its realization in practice? What does it tell us about teacher use of emerging social media? This section explores some of the contentions, questions, and research surrounding the use of social media in education. The amount of literature in this area grows at such an amazing rate that academics have a difficult time keeping up. Coiro et al. (2008), writing about the impact of the Internet, called the pace of change “breathtaking” (p. 3) and stated,

No previous technology for literacy has been adopted by so many, in so many different places, in such a short period, and with such profound consequences . . . no previous technology for literacy provided access to so much information that is so useful, to so many people, in the history of the world. (pp. 2-3)

The Internet, of course, provides much more than information; it is also a platform with the potential for unparalleled communication, creation, collaboration and sharing. Brown and Adler (2008) suggested that the Internet’s most profound impact “is its ability to support and expand the various aspects of social learning” (p. 18) and that its full

potential has yet to be seen. Bower et al. (2010) suggested that social media and Web 2.0 technologies provide numerous opportunities for realizing constructivist and constructionist learning. It must be remembered that, from the constructivist viewpoint, the research findings discussed in this review are contextual and not necessarily generalizable. Still, they provide insight into the potential benefits and potential pitfalls of using social media in formal education. The literature adds emphasis for the necessity of this research. Further, it has informed the design and interpretation of the findings in this study.

Social Media: Affordances for Education

Social media are Internet-based technologies that enable “interaction, collaboration and sharing between users” (Redecker, Ala-Mutka, Bacigalpo, Ferrari & Punie, 2009, p. 19). These emerging technologies provide affordances that have much touted potential in education. It has been established that there is a connection between social media and constructivist, student-centred pedagogies (Herman et al., 2008; Overbay et al., 2010; Rakes et al., 2006). Social media applications focus on social connectivity and engagement that facilitate collaborative learning, sharing, cooperation, and reflection, and that offer a venue for publishing student work, all desirable outcomes for learning (Ajjan & Hartshorne, 2008; Lieberman & Mace, 2010; Wang & Hsua, 2008). These affordances are explored in this section, from both theoretical and research-based perspectives.

Agarwal (2011) described social media as providing an “inexpensive, easy-to-use, interactive, dynamic, collaborative, unregulated, almost ubiquitous, and democratic platform” (p. 40). These features can be both a boon and a concern for educators. On the

one hand, social media can be a promising platform for collaborative work; on the other, they give rise to concerns about issues such as privacy and safety, especially for younger students. Mere use of the technology, however, is not sufficient for learning, nor is simple interaction. True participation and a willingness to engage and collaborate are seen as pre-requisites for meaningful learning using social media (Hernandez-Serrano, 2011).

Several characteristics of social media make it useful for collaborative and group learning and are delineated by Agarwal (2011):

- Social media sites are publicly available for free or low cost.
- Social media sites can be altered and modified at anytime.
- Social media can potentially reach a global audience.
- The time lag between communications can be almost non-existent, acting to enable synchronous collaboration over distance.
- Most social media sites are very easy to use. (p. 40)

How can the affordances and characteristics of social media be harnessed for teaching and, by extension, learning? How can the issues and concerns be allayed? How are these technologies used in various educational contexts and what can they tell us?

Benefits for learning? The result of teaching, one would hope, is learning. What are some of the specific benefits for learning afforded by social media? Purported benefits are based on the social nature of the media: the opportunity for sharing, communicating, conversation, collaborating, evaluating, and reflection any time and any place (that is, assuming connectivity, which may not always be the case). One of the educational benefits of social media is that it can help youth to “work out their personal beliefs, challenge cultural assumptions, and navigate complex relationships . . . work out

emotional situations, leading to increased academic productivity” (Greenhow et al., 2009, p. 251). Dwyer, Hiltz, and Wildmeyer (2008) reinforced this notion when they conducted an open-ended survey of 226 participants using Facebook or MySpace, in an effort to predict the structure and use of social networking sites. The respondents indicated that using social networks saved them time and allowed them to be more efficient. This survey was of general users of these networks, leaving the following question: What is the evidence for learning and academic benefits as a result of these connections? It would appear from literature searches that most available research in this area has been conducted on specific social media technologies, for example, on the use of blogs or wikis or social network sites. As well, it seems that post-secondary and adult education is far more represented in the research. These shortcomings support the need for research at the K-12 level.

A number of studies have examined the use of social networking tools to promote discourse and thinking at all levels of schooling. Allen (2008) conducted a qualitative case study (N=5) based in the U.S., which explored teachers’ use of Web 2.0 technologies through the lens of transformative learning theory. One of the findings was that the teachers found increased student engagement and performance as students participated in more authentic work with a global audience. In another study, Fahser-Hero (2010) conducted a qualitative multiple case study examining Web 2.0 use by middle school students in two grade eight classes in the U.S. Her findings led her to conclude that these technologies “engage students in high level learning” (p. 256) and support constructivist pedagogy, supporting social practices in groups both in and out of class. These results were similar to those in Miller’s (2009) study of high school students

in Connecticut. Miller also used a qualitative approach using interviews of 11 students and a teacher in one class. The results found that students were highly engaged in collaborative learning and that they developed important digital literacy skills. All three of these studies came to similar conclusions: the use of social media tools acted to increase student engagement and performance. Interestingly, both Fahser-Hero (2010) and Miller (2009) pointed to the void in this area of research and to the need for more research into the use of Web 2.0 technologies for learning.

One of the main reasons cited for using blogs, a type of social media, is to provide time and space for reflective thought, since “the blog provides an outlet for deeper exploration and discussion of the subject matter” (De Souza-Hart, 2010, p. 149). This contention is also supported by Deed and Edwards (2011), who suggested that blogs could help students construct knowledge by engaging in “thoughtful dialogue” (p. 12). Deeds and Edwards conducted a mixed methods case study. Although the participants (N=400) were in their first year of university in the U.K., their findings could be applicable to younger students. This study investigated the use of blogs for active learning and found that students need preparation and scaffolding during the early parts of the blogging process for success. Wang and Hsua (2008) also advised instructors to encourage and guide their students through the process in order to achieve the best results.

Lee (2010) conducted a mixed methods study examining the use of blogs in a university class in the U.S. This study, with 17 participants, found blogging to be beneficial for student writing, reflection, interaction, and sense of community. Lee also found that students enjoyed the experience, so there was a motivational factor as well. In

their consideration of the theoretical affordances of Web 2.0 tools for learning, Glassman and Kang (2011) suggested that blogs provided natural situations for problem solving and for connecting and making sense of information. In addition to text, blogs facilitate multimedia and hyperlinks that can extend and connect thoughts. They can also serve as information to teachers for planning. Wang and Hsua (2008) used blogging in their courses for pre-service teachers in the U.S. In their personal reflections of the experience, they concluded that blogging could —

- Help an instructor facilitate in-depth discussion,
- Encourage opinion expression among participants who are uncomfortable with related face-to-face settings, and
- Provide users with an interactive channel through which they can debate or discuss issues. (p. 85)

Deng and Yuen (2011) undertook a similar study, also with two consecutive classes of pre-service teachers (a total of 37 students), in Hong Kong. After gathering data via questionnaires and interviews, one conclusion was that the blogs showed short bursts of activity and limited evidence of reflective dialogue, although they did provide students with peer support. While the evidence of reflective dialogue was not predominant within the blogs, the questionnaires showed that reading the blogs did provoke reflective thinking on the part of the readers. Interestingly these findings did not support the less formal observations of Wang and Hsua (2008).

Polly (2007) contended that blogs have the potential to affect K-12 education as well, providing opportunities for asynchronous communication, self-publishing, higher order tasks and writing across the curriculum. Ayers (2011) conducted a study that

explored the use of blogs in two high school English classes over an eight-month period. Ayers' study included 80 blogs. His qualitative data included analysis of the blogs and interviews with 8 students. Ayers (2011) concluded,

My findings suggest that the connectivity offered by Web 2.0 enabled students to reach and communicate with authentic audiences who could recognize and validate their identity performances. Further, I argue that though certain features of Web 2.0 media are incongruous with many conventional classroom norms, teachers should work to bridge those gaps. (p. 1)

In this study, we see evidence for the importance of authentic audience for students. Ayers (2011) also addressed issues that arose from using blogs, such as censorship, privacy, and freedom. This is the origin of the last part of the statement above: that teachers need to be aware of these issues and be prepared to deal with them. Overall, Ayers (2011) found that blogs offered authentic audience, connections, and discussion.

In the studies described, findings support the touted benefits of blogs in some cases, but suggest otherwise in other cases. Perhaps this is a further indication of the importance of context. Once again, it must be stated that the majority of studies are in post-secondary settings, and in a non-Canadian context. The findings described here, however, do help to shed some light on the potential affordances of social media in the form of blogs, and, more significantly, the importance of support and scaffolding in the process, both of which may be applicable to younger students.

Another early type of social media site that has garnered attention in education is the wiki, web sites that allow users to work collaboratively to build the site. According to Glassman and Kang (2011), wikis go a step beyond blogs, adding the ability for more

collaborative work. They believed that wikis offer the chance for integrated problem solving and cooperation. In the case of wikis, several studies involving K-12 schools are of interest. Grant (2006) used case study methodology to investigate three classes' use of wikis. In this study, located in the U.K., 13 and 14 year-old students were assigned to groups of 6-9 and created a short-term wiki project. In addition to the wikis themselves, students completed a survey, several took part in a focus group, and the teacher was interviewed. Several interesting observations were made. One was that students did not edit one another's work. In one case when this happened, an argument took place about it. This raises questions about collaborative work, although the students exhibited more collaborative work when it came to design and not writing. Generally, the students did not make comments on others' work, in terms of content knowledge, even within the same group. Nevertheless, Grant concluded by suggesting that wikis and other social media are "rich areas for further research in the fields of learning and education" (p. 9). She suggested that the lack of true collaborative work was possibly due to the short term of the study and that the approach was new, concluding that wikis do hold promise for education, perhaps with an approach that models their use and allows more time in the environment

Pifarre and Staarman (2011) also examined the use of wikis in an attempt to examine their collaborative use in a primary environment. Their study involved 25 primary students (9-10 years old) in Spain. The students worked in pairs on a science project over 13 hours; the resulting wikis were then analyzed. Their results showed how students were engaged in collaborative work that "gave a 'voice' to all members" (Pifarre & Staarman, p. 202) and allowed them to discuss ideas, justify their ideas, and build on

one another's ideas. It is important to note that the wiki itself did not force the collaboration, although the authors pointed out that the characteristics of the wiki, along with a well-designed learning environment, played a role in creating a collaborative process.

Reich, Murnane, and Willett (2012) undertook a large-scale analysis of wiki use in K-12 schools in the U.S. This study examined a representative sample (1% or 1,799 wikis) from almost 180,000 publicly viewable education-related wikis. The study was meant to determine how wikis are used in K-12 schools and what quality exists, in terms of thinking, communication, and new media literacy. Reich et al. found four kinds of wikis: teacher resource sharing (40%), teacher content delivery (34%), student assignments and portfolios by individual students (25%) and collaborative student sites (1%) (p. 7). This study included a number of interesting findings, including that wikis provided few opportunities for "21st century skill development" (p. 12), and that when they did, it occurred more often in schools located in more affluent areas. Exceptions to the development of skills were noted, showing that such potential does exist, but it was not common. In addition, most wikis are abandoned fairly quickly, and most are teacher-centred for the delivery of content. The findings of these various studies about wikis in K-12 contexts provide an interesting contrast to the postulated affordances. While highly touted for opportunities for collaboration, the mixed findings of these studies show that this does not always happen.

Social networks, such as Facebook, are also being used in classrooms. A case study that followed two high school English teachers who used social networking in their classrooms resulted in interesting observations and findings (Moayeri, 2010). In this

study, two grade 10 English classes in British Columbia participated in a qualitative case study. Data were collected through multiple methods, including teacher interviews, observations over a three-month period, informal discussions, the online space under study (a social network site, called Ning), and a focus group of students. One important, and astute, observation was made when several of the students noticed that using the social network provided a way to connect popular students with those less popular, and to “bond the genders” (Moayeri, 2010, p. 38). Recall that Pifarre and Staarman (2011), although their participants were using a different social medium, also reported that students were engaged in collaborative work that gave all students a voice. A second observation reported for one of the teachers in Moayeri’s (2010) study was that the site connected students in a range of collaborative participation. In this teacher’s use of the medium, the use of video, images, and sound supplemented text and made for a more successful experience for the students, who continued the discussions started on the network outside the confines of the classroom. Both teachers agreed that the site had tools that would get students excited about their learning, although they both faced challenges, especially in terms of assessment and the “continued tensions between incorporating new literacies and sticking to traditional ones in classroom settings” (Moayeri, p. 39).

A doctoral dissertation study by Casey (Casey 2013; Casey and Evans, 2011) also examined the use of a Ning social network, this time with seven classes (approximately 150 students) in a high school in Australia. This study focused on the students and what scaffolding was needed as they made use of the social network. This qualitative study included data from teacher documents, field notes, teacher reflections, and student work

including self-evaluations and reflections. The researcher pointed out that the network “challenged what it means to teach and learn” (Casey & Evans, 2011, p. 6). Casey (2013) described how her own identity as a teacher was affected, since she had to unlearn some “previous teacher behaviours” (p. 23). The students in this case became active users of the network and it developed into a dynamic learning environment since the tools of the social network offered ways for increased “engagement, collaboration and, at times, a focused distraction for students in a face-to-face classroom” (Casey, p. 22). Parents were also supportive of the network and the availability of resources outside the classroom. Casey and Evans (2011) described the learning as “non-linear” and “emergent, divergent and convergent” (p. 21) in a community of practice. The aforementioned studies by Moayeri (2010) and Casey and Evans (2013) support the promise of social media for engaging, connected learning, yet they also point out that the learning environment, including support for students, is important for success.

Yet another benefit of social media suggested by some educators, and observed in research studies, is that students can share their work with a wider audience than traditional venues, reaching outside the classroom (Wang & Hsua, 2008). Normally, the audience for student projects is the teacher and perhaps classmates and parents. Hamel (2011) explained, “There is a profound emotional difference between submitting an essay for grading by one’s teacher and adding content to a wiki where that same essay will enter the public domain” (p. 25). In the previously described case study, Moayeri (2010) found that students enjoyed access to their classmates’ writing and receiving comments from others. One telling observation made by Moayeri was that students admitted to spending more time on responses than they did if the only one to see the work was the

teacher. Providing such an authentic, real audience for student work by using social media can be very motivating. The opportunity for feedback, acknowledgement, and reflection has the potential to provide a powerful learning experience for students.

The studies described in this section point to varied results when social media tools are used in schools. While the context of most studies in this area is post-secondary education, there is evidence that successful use of social media is possible in K-12 education. In a comprehensive review of theoretical frameworks and research on social networks, Ahn (2011) pointed out that the technology alone does not enable or constrain how a social medium is used, but it is the features of that technology, in concert with cultural and behavioral norms, that determine how the technology is used. It is apparent that research in the area of social media in education is emerging and that further research, especially in K-12 education, is warranted (Ahn, 2011).

Digital literacies? One reason offered for the use of social media in schools, and that deserves at least a brief examination, is the promotion and development of so-called “new literacies” (Baker, 2010; Coiro et al., 2008; Greenhow et al., 2009; Policy Horizons Canada, 2011; Rheingold, 2008, 2010, Richardson, 2009). These literacies are known by several names: social media literacies, Internet literacy, information literacy, and the more encompassing media literacy. Generally, these literacies refer to a knowledge and understanding of digital media, including how they work and how to use them appropriately and ethically. Coiro et al. (2008) claimed that understanding these new literacies would “provide the best opportunity to help individuals fully realize their potential as global citizens in the 21st century” (p. 2). Rheingold (2010) stated, “Access to many media empowers only those who know how to use them” (p. 14). Because of the

importance of these skills, it has been suggested that the responsibility to support digital literacy should fall, at least partly, to schools (Hamel, 2011). Indeed, the development of these literacies is a key focus of the Manitoba Education *Literacy with ICT across the curriculum* (2006) continuum for Manitoba schools. Numerous organizations have developed web sites devoted to the topic (for example, www.media-awareness.ca, www.medialiteracy.com, www.aml.ca) to support teachers, parents, and students in learning about them.

Like many of the terms discussed earlier, digital literacy also has a variety of meanings and is used in different ways by different people and groups (Baker, 2010). According to Manitoba Education (2006), literacy with ICT means developing a variety of skills, including choosing and using information and communication technologies (ICT) responsibly and ethically, and using them to support critical and creative thinking and communication. Baker (2010) stated that media literacy refers to both the analysis and creation of media productions. However, he also pointed out that some groups use it to also refer to other skills, such as searching for and finding reliable information on the Internet (information literacy) or using proper behaviour on the Internet

Rheingold (2010; 2012) took these ideas further to write specifically about social media literacies. He included five social media literacies: attention, participation, collaboration, network awareness, and critical consumption or “crap detection” (Rheingold, 2012, p. 89). Richardson (2009) suggested similar skills, including critically reading information and people, writing for an audience, and using multiple modes, sharing, and engaging diverse voices. Coiro et al. (2008) suggested four characteristics of new literacies, two of which in particular fit with the points made so far. One is that new

literacies are “central to full civic, economic, and personal participation in a world community” (p. 14), and the other is that these literacies are “multiple, multimodal, and multifaceted” (p. 14). While the exact meaning of digital literacy is open for debate, it seems that educators, scholars and others feel that learning about and understanding the various forms of new media are important, and are therefore a reason for using social media in schools. One of the great media thinkers of the past century, Marshall McLuhan, took studying media and its messages very seriously (Theall, 1971). He sought to understand media and the effects it had on the world. Perhaps using social media in schools will help to reach these goals, and make it a worthy subject for scholarly research.

Democratic values? A concept that is often included as part of media literacies is the development of citizenship in a democracy. Livingstone, Van Couvering, and Thumin (2008) stated that the first purpose of media literacy education is “democracy, participation, and active citizenship” (p. 105). What does this have to do with social media use in schools? One of the purported characteristics of the Internet, and of social media, is that it is a “democratizing” medium with the potential to promote equality, democracy and social justice (Kedzie & Aragon, 2002; Redecker et al., 2009). Warschauer (2008) wrote, “ICT . . . is rightly seen as having the potential to help individuals, groups, and even nations” (pp. 149-150). Some critical scholars have suggested that schools are sites of social reproduction (Apple, 2008; McLaren, 2009), indoctrinating youth to fit into current hegemonic structures. As a result, the ideals of democracy and social justice are desirable outcomes for schools (Apple, 2008; Giroux, 2009). It has been suggested that social media has the potential to give everyone a voice.

It does not discriminate. Debating this contention is certainly possible, and some findings may be useful to consider.

A recent report from the Media Awareness Network (Hamel, 2011) offered some interesting results about social media, youth, and civic engagement in a survey of research on the topic. Overall, the research examined in the report did not show that Internet use had a strong effect on civic engagement. Whatever effect it did have was small, but positive. The research review did, however, show that many youth turn to the Internet for information and, as they become older, they show more interest in social and legal issues. In addition, it was found that engagement in social media and gaming can have an important role to play in building social capital and later civic engagement. An interesting finding shared was that Canadian youth who volunteer use the Internet more than those who do not volunteer. The recommendations in the report include suggestions for increased emphasis on online literacy skills, including use of Web 2.0 (social media) tools for discussions and increased access in schools. Hamel (2011) pointed out the overlap between civic engagement, social capital, and political efficacy. He contended that digital literacy could lead to increased constructive social action because of the ability to find information, connect, communicate, and share.

Using social media, students and teachers can connect to others with different viewpoints and from other cultures, as suggested by Palfrey and Glasser (2008), or take part in democratic dialogue (Wylie & Marri, 2010). Can social media help to “bridge long-standing and powerful social inequities” (Lei, Conway, & Zhao, 2008, p. 37)? Or will people interact only with people who think as they do, a virtual echo chamber, acting

to cement existing prejudice and bias (boyd, 2008)? These are interesting questions that deserve study.

Wylie and Marri (2010) conducted a study that examined the use of social networking for democratic dialogue and education by high school students. This case study analyzed 353 comments made by 111 students about a situation that arose in a Florida high school over a ten-day period. The in-depth analysis found that democratic dialogue did take place and built a community that crossed many divisions, including gender, race, and culture. The conclusion was that social media do provide an opportunity for democratic dialogue to take place, yet the research also raised many questions.

Cucinelli (2010) used a participatory action research methodology to explore how digital media, including social media, can be used to engage in social justice pedagogy.

Participants were marginalized youth from a borough of Montreal. The goal of the project was to create digital media productions, including the integrated use of online social media, to engage in social justice projects. By using this type of media, youth were able to engage in collaborative learning and empowerment. While these two studies were very different in methodology and purpose, they illustrate that there is some potential for social media to be used for democratic ideals with youth. Can the use of social media in the classroom lead to ideals of democracy and equity, or will it only reproduce or strengthen existing inequalities? These are important questions to consider. The potential to connect, engage, and learn about and with others is one reason that some schools and teachers are using social media.

Communities of learners? A potentially powerful affordance of social media for teachers and students alike is the opening of avenues for learning, collaborating, and

sharing, thereby creating a digital community of practice as described by Lave, White and Smith (2009), or a more loosely connected affinity space as proposed by Gee (2005). Earlier in this chapter, this use of social media for students was explored. Lieberman and Mace (2009) suggested that the use of social media is important to educators since it permits what is often an isolating occupation to become more collaborative and public, to the benefit of teachers and students alike.

Some cautions, however, are worth noting for collaboration in these types of networks. Brass and Mocoli (2011) conducted a bounded case study that looked at a failed attempt at teacher collaboration by using a wiki in an effort to uncover reasons for the failure and offer suggestions for future success. This study involved participants in a wiki community. The number of wiki users was 15-20, and data consisted of the archived wiki, questionnaires, and personal communications. This particular wiki was not successful for several reasons, including technical concerns and time. More important, however, was discomfort with “taking on the role of expert” (Brass & Mocoli, 2011, p. 158) by posting information and changing other people’s content on the wiki. Another important concern surrounds issues of privacy. Some people are hesitant to take part in online communities since they have a fear of putting themselves out in such a public way.

Brass and Mocoli (2011) concluded that opportunities and support are needed to help teachers make use of these social spaces so that they “may develop a more situated and robust knowledge of digital epistemologies and a much better sense of the social construction of knowledge” (p. 160). After all, teachers’ use of technology in the classroom tends to align with their beliefs. This was shown in the qualitative multiple case study conducted by Ottenbreit-Leftwich et al. (2010). In this study, eight teachers,

recipients of an award program in Michigan, were followed as they integrated technology into their classrooms. Data included interviews, observations, and portfolios, and were analyzed for similarities and differences in value beliefs. The research team concluded that successful technology use is dependent on the beliefs and values of the teachers, in particular their desire to do what is best for their students.

In her qualitative case study, which included five teacher participants and explored teachers' use of Web 2.0 technologies through the lens of transformative learning theory, Allen (2008) concluded that teachers who are supported in exploring and reflecting on their use of Web 2.0 tools can experience transformative learning, in which they "rethink perspectives on their roles in and out of the classroom" (p. 398). If concerns about using social media are displayed by teachers and this makes them hesitant to participate in online networks, these same concerns will certainly play a role in whether or not those same teachers will make use of the media in the classroom. Ottenbreit-Leftwich et al. (2010) observed that the desire to improve as professionals affected the teachers' decisions to use technology because they believed that it would impact student learning. Allen (2008) also found that these experiences could be transformational. Taking part in some form of digital community, and using the tools for themselves, may help to allay teachers' concerns. This research could support, or refute, these contentions.

Controversies and Concerns

Social media use in schools, and in society at large, is not without controversies and concerns that make it worrisome for some parents and educators (Ahn, 2011). This section offers a brief look at some of these concerns, which deserve attention in research

as well. Concerns about using social media range from privacy issues to potentially isolating effects. Ahn reported that about 70% of school districts in the U.S. block social sites, mainly because of fears for student safety (p. 1439). Safety concerns often centre on issues of privacy, interactions with strangers, and bullying behaviour. It would seem that some of these concerns are often exaggerated. Studies cited by Ahn show that the majority of youth use privacy features to manage who has access to their information, and use sites to converse with friends they already know. Ahn suggested, “research on social media effects are vital to inform the societal debates and concerns about new technology and youth” (p. 1444). Even a small number of incidents can be concerning to parents and educators, and therefore, need to be addressed.

Yet another controversy about social media centres on the commercial aspects, in particular the advertising that occurs on many social media sites. Friesen (2010) argued that commercial social networks are more concerned about connecting their users to advertisers than about knowledge and learning. Friesen stated, “These services, by design, clearly serve interests and priorities other than (and in many cases opposed to) those of learning. If anything, they represent a new way of selling viewers to advertisers” (p. 10). In a subsequent paper, Friesen and Lowe (2011) expanded on this argument, stating that commercial networks actually work against democratic values by reducing the capacity for disagreement and debate through their design and user restrictions. Lamb and Groom (2010) also wrote about the commodification of education by the utilization of corporate social sites, which exist to match users with advertisers. Lamb and Groom argued that higher education (and presumably primary and secondary education) should

provide “safe-spaces” that are free from commercial intrusion. Such concerns are important to consider and could have an effect on the use of social media in schools.

Other controversies exist about the effects of the always on, connected culture of social media. These arguments range from technology being a distraction that leads to a lack of attention and focus (Carr, 2010), to being in a state of “continuous partial attention” (Small & Vorgan, 2011/2008, p. 92) causing brain burnout due to constant stress. This notion of being distracted by technology is a complex one with the ideas of multi-tasking and task switching central to the discussion. An interesting study conducted by Rosen, Carrier, and Cheever (2013) provides some valuable insight. This study examined the impact of technological distractions on studying behaviour in 263 middle school, high school, and college students. Task-switching behaviour was observed and recorded as students studied for a 15-minute period. As well, participants answered a questionnaire about their study habits and media use. Several findings were interesting and relevant. Participants averaged fewer than 6 minutes before switching tasks – most often due to “technological distractions including social media, texting and a preference for task-switching” (Rosen et al., p. 948). Those who preferred to switch tasks often also created a study environment with more access to technologies and tended to be more off task than others. The authors concluded that this indicated a conscious intent to switch tasks during study.

When Rosen et al. (2013) compared their study to other, related ones, they concluded that removing technological distractions would not help:

The bottom line is that students want to multitask or task switch and technology encourages them to do so. Requiring them to unitask either in the classroom or

while studying will turn out to be a fruitless effort as all this does is shift from external auditory, visual and tactile distractors to an internal, anxiety-laden need to check in with their electronic worlds. (p. 956)

Finally, Rosen et al. suggested that teachers could use technology breaks and teach strategies for dealing with the distractions. This final idea is similar to the strategy of being mindful and learning to focus attention, described in Rheingold's (2012) book *Net Smart*. The effects of the always connected world may eventually lead us to what Deresiewicz (2011/2009) called the "end of solitude," the time we take for ourselves to think and contemplate, valuable time to many of us. Are these concerns real or are they without merit? Even if some concerns are overstated, they still may be real concerns for some and they should not be dismissed out of hand.

Bull, Thompson, Searson, Garafalo, Park, Young, and Lee (2008) summarized some of the challenges and constraints that schools and teachers face when attempting to make use of the potential of social media. Key among them were constraints of curriculum outcomes, time, investment in print resources, limited access to the Internet because of blocking, and the tendency of technology to increase difficulties in classroom management. Bull et al. also pointed out that there are "limited models for integration of media into their teaching" (p. 102), and that there is a lack of research to guide them. Many of these constraints have been mentioned previously in this chapter, and once again, they point to the importance of research in real classrooms with real teachers making use of social media. This brief look at some of the issues shows that this area of study is an important one. How and why do teachers use the new tools of social media? What effects will they have?

Summary

This chapter started with an examination of the sociocultural basis of learning and transformational learning theory, and how they connect to the use of social media. Both of these topics are important theoretical frameworks for this study. Can the incorporation of social media change a teacher's practice? Will it lead to transformative change? Next was an examination of social media. What are social media? What does it entail? What makes someone a user of social media? The features of social media included that it was Internet based, was based on Web 2.0 philosophy, and depended on user-generated content and interaction. This section was followed by background describing some of the varied research results and thoughts about educational technology. Research and use of educational technology have resulted in varied and disparate views. This history is important to making sense of this research. Finally, ideas about the purported affordances provided by social media and research findings that looked at these affordances were provided. Completing this overview of affordances of social media for learning was a brief look at controversies and issues that are important considerations when exploring the use of social media. From a constructivist point of view, the value of using social media as a means of transforming teaching is complex, and contextual. This is obviously an important area for further study, as suggested by many researchers and scholars. This study tells the stories about how classroom teachers make use of social media for teaching, from their perspective, and also looks at any changes that result in their pedagogical practice. The methodology of this project is described in Chapter three.

Chapter 3: Methodology

The purpose of this chapter is to describe the methodology and procedures used in the research. This description includes the approach used and why it was used, the case selection and consent process, the methods of collecting data, the data sources, and the methods and procedures used for analyzing the data. While analysis occurred, as much as possible, simultaneously with collection, each process is described separately. In addition, issues of reliability, validity (trustworthiness), and ethical considerations are addressed. Several scholars have informed this methodology chapter. Most prominent among them are Creswell (2007, 2012), Plowright (2011), Ryan and Bernard (2003), and Willis (2007, 2008) on general research methodology, and Merriam (2009), Stake (2005), and Yin (2009) on case study methodology. Several studies were important models for informing the design of this study, in particular the work of Coppola (2004) and Allen (2008). In addition, the interview instruments designed and used by Allen (2008), Chen and Bryer (2012), Coppola (2004), King (2009), and Miller (2009) were used to assist in the development of the interview protocols.

Research Purpose and Questions: Revisited

The purpose of this study was to examine the recent phenomenon of using social media for teaching from the perspective of the teacher, and to determine if, and how, this changes the teacher's pedagogical practice. This research used a multiple case study approach (Merriam, 2009; Yin, 2009) in examining several teachers' learning about, and explorations of, the use of social media in their practice. It was intended that the teachers recruited for this study would be at a range of stages in their use of social media, from those just beginning to explore the use of social media, to those who have used such

media for several years. Additionally, these teachers were, ideally, to be located in one school, affording the opportunity for deep discussion and the examination of school factors that impacted their use of social media. This study examined the successes, failures, and other factors related to the pedagogical use of social media from the case teachers' perspectives.

Research Questions

To further define the scope of this study, the following research questions were asked:

1. How, and why, do some teachers use social media as part of their practice?
2. What are some teachers' perspectives of their experience incorporating social media in their practice?
3. What factors support or hinder some teachers' use of social media in their practice?
4. Does incorporating social media into teaching lead to change in some teachers' pedagogical practices and beliefs? What is the nature of this change?

Study Design

This study used a qualitative interpretivist multiple case study approach. Merriam (2009) defined a case study as “an in depth description and analysis of a bounded system” (p. 40). Specifically, this study followed multiple cases; each case was a teacher who was at some stage of exploration and utilization of social media in his/her teaching practice. The teachers taking part in the study ranged in experience with social media from several who were just beginning their use of social media in their teaching practice to some who were further along in their use of social media for teaching. As discussed in chapter one, a complicated continuum of social media users may be conceptualized;

however, for this study, any teacher who made use of, or was planning to make use of, social media, would be considered as a user. The intention was to have the case teachers embedded in a single school site. In this way, all participants were in the same school and were interviewed over the same time frame, facilitating convenient data collection as well as the opportunity to compare teachers in a similar context. Fortunately, the first school approached provided me with nine willing participants who met the criteria for the study. A multiple case approach was chosen to provide insight into a particular phenomenon (Creswell, 2012; Merriam, 2009; Stake, 2005), in this case the adoption of social media tools as part of teaching practice.

Qualitative studies are notable because they occur in natural settings and are attempts to “make sense of, or interpret, phenomena in terms of the meanings people bring to them” (Denzin & Lincoln, 2005, p. 3). In this study, the interest was in the stories that the teachers told about their use of social media. Furthermore, case studies are based on three features that make this methodology useful for this study. As described by Merriam (2009), case studies are –

- They are particularistic, in that they “focus on a particular situation, event, program or phenomenon.” In these cases, the phenomenon is the adoption of social media in teaching.
- They are descriptive, in that they contain a “‘thick’ description of the phenomenon under study.”
- They are heuristic in that they “illuminate the reader’s understanding of the phenomenon.” (pp. 43-44)

Case study is an ideal method and often “the only viable alternative” (Willis, 2007, p. 212) for studying educational technology because of the complexity of institutions such as schools. Darke, Shanks, and Broadbent (1998) found that case studies are the most widely used method for investigating digital technology, since it is “well suited to understanding the interactions between information technology-related innovations and organizational contexts” (p. 273). The focus of a case study is in “understanding the intricacies of a particular situation” (Willis, 2007, p. 243). Case studies facilitate rich, detailed descriptions of educational technology used in context, which can be very informative for understanding the phenomenon under study. A search of the literature provided many examples of case studies used in educational technology research, giving evidence to the popularity and appropriateness of the methodology.

Example studies include large-scale studies, such as Cuban’s (2001) study of computer use in California schools. In another example, Coppola (2004) described her examination of how teachers learn to integrate technology into their teaching in the book *Powering Up*. Her study focused on five cases: teachers who were integrating technology into their constructivist practice at a high school in the northeastern U.S. Coppola’s study has parallels to this study in many ways, and served as a useful model for its design. Case studies have also been used in recently published research that sought to understand various aspects of emerging technologies, such as Web 2.0 and social media. Many of these studies have been discussed in chapter two of this dissertation (for example: Brass & Mecoli, 2011; Deed & Edwards, 2011; Moayeri, 2010; Ottenbreit-Leftwich, Glazewski, Newby, & Ertmer, 2010). Case study methods have also been used in doctoral dissertations examining educational technology (for example: Allen, 2008;

Fahser-Herro, 2009; Miller, 2009; Steinman, 2010). The use of a case study approach is well established in educational technology studies, and is appropriate for this study.

In chapter one (p. 10), this study was described as being guided by an interpretivist, hermeneutic, and phenomenological framework. Phenomenological approaches seek the *essence* of a phenomenon (Creswell, 2007; Merriam, 2009), in this case, the adoption of social media as a tool for teaching. An important concept in phenomenology is the idea of phenomenological reduction or bracketing, which has its roots in the work of Husserl (Husserl, 1964/1907; LeVasseur, 2003; Tufford & Newman, 2012). Phenomenological reduction is the process of setting aside, or bracketing out our preconceptions, prior knowledge and biases when investigating a phenomenon (LeVasseur, 2003). The expected result is that a fresh impression or perspective is formed about the phenomena, free of influence arising from the researcher's background (Creswell, 2007; LeVasseur, 2003).

Nevertheless, the idea of bracketing is contested in the literature (Creswell, 2007; LeVasseur, 2003; Merriam, 2007; Tufford & Newman, 2012). Many researchers and phenomenologists since Husserl have considered it is impossible to attain such a state. Although Husserl's student, Heidegger, rejected the idea of bracketing, later phenomenologists, such as Merleau-Ponty, retained some of the ideas of bracketing as a way to "set aside personal preconceptions to reveal lived experience" (Tufford & Newman, 2012, p. 83). In arguing that objectivity is not itself objective, Van Heertum (2005) maintained that supposed objective research tends to look at an outcome "in isolation from the whole" (p. 10). He concluded that research should "not abandon its spirit completely. Instead, research can move to a position where balance, fairness, and

reflexivity replace value-free norms” (p. 14). One of Van Heertum’s suggestions includes a researcher “communicating positionality” (p. 15). Whether bracketing is truly possible or not, in practice it “has the potential to greatly enrich data collection, research findings and interpretation – to the extent the researcher as instrument, maintains self-awareness as part of an ongoing process” (Tufford & Newman, 2012, p. 85). LeVasseur (2003) came to a similar conclusion in that bracketing can be thought of as being curious and being open to questioning. To this end, Tufford and Newman (2012) made several suggestions in accordance with their conception of bracketing. These methods include the researcher exploring their own preconceptions and engaging in discussions with someone not involved in the research as a way to become aware of biases.

Maintaining such an open, curious attitude and suspending judgment can be important in conducting research. It enables the researcher to step back from the context to hear what the participants are saying and thus remain true to the participants’ perspectives. These practices were employed in conducting this research. In a reflexive process, also suggested by Moustakas as described by Creswell (2007), I have examined and described my background in chapter one and throughout this report of the research. In addition, I have often engaged in conversation with colleagues (critical friends) about the research as a means to explore my preconceptions and to keep a fresh, open perspective.

Participant Selection and Consent Process

One of the important first steps of data collection is the selection of the participants (Creswell, 2007). Case selection for this study followed non-probability based methods, being both purposeful and convenient (Plowright, 2011). Convenience

sampling provided cases that were easily accessed, making the collection of rich, descriptive data possible. Stake (2005) argued that cases must be chosen using a purposeful method so that a meaningful study that addresses the phenomenon under investigation is the result. The sampling for this study was purposeful in that the cases met, or came as close as possible to, established criteria (described later in this section). This method of purposeful and convenience sampling has precedent in related studies. Coppola (2004) used it to find a site and cases very suitable for her study, Allen (2008) used a related snowball method for finding cases for her research, and Costa (2013) used purposive selection in her doctoral dissertation in order to ensure that participants met the criteria and would provide rich data. Costa's (2013) study examined ten academics who used the participatory web for academic research. Fahser-Herro (2010) also pointed out the value of cases that are easy to access and friendly to the inquiry. Both of these final points were applicable to this study.

Using purposeful sampling, I sought between seven and ten grades 7-12 teachers (cases), preferably teaching at the same school, who would consent to be participants in the study. Plowright (2011) pointed out that the number of cases is a choice between breadth and depth. However, he also noted that case studies typically involve a small number of participants. An issue with a large number of cases is that the "information tends to be superficial" (Plowright, 2011, p. 25). Seeking 7-10 cases was the goal in order to keep the amount of data reasonable, yet detailed, and also to provide several perspectives for comparison from a phenomenological standpoint (Creswell, 2007). In general, qualitative studies involve a varying sample size, typically with a few individuals or cases; however, they can range from one participant to several (Creswell, 2012).

Merriam (2009) pointed out that sample size in case study is ambiguous, dependent on the question, the progress of analysis, and resources available. As examples of the range of participants, Allen's (2008) study, which looked at transformative learning in teachers using Web 2.0 technologies, involved 5 participants. Allen (2008) also pointed out that five participants "resulted in an overwhelming amount of data for analysis" (p. 388), suggesting that she should have used a reduced number of participants. In other studies, Costa (2013) recruited 10 participants, Ottenbreit-Leftowich et al. (2010) involved 8 participants in a case study that examined teacher beliefs and values about technology use, and Moayeri's (2010) case study about the use of a social network in the classroom involved only 2 cases. Based on the literature, 7-10 cases seems to be a number that allows the depth and breadth described by Plowright (2011).

Selection Criteria

The first criterion for this study was a location in rural Manitoba. The desire for this area was based on several reasons. First, the mission statement of Brandon University and the Faculty of Education (my place of employment) stresses the importance of its responsibilities to rural Manitoba. One of the stated objectives is "to serve as a major resource in enriching the quality of life for the people of Brandon and of the rural and remote areas of Manitoba" (Brandon University, 1990). The mission statement for the Brandon University Faculty of Education also states, in part; "In consultation with the educational community, we place emphasis on education for rural, Aboriginal and northern communities" (Brandon University, n.d.). Further support for the choice of a rural location is that Manitoba Education (n.d.) has stated that education in rural Manitoba is one of six priority areas. In addition, both the Manitoba Association of

School Superintendents (MASS) and the Manitoba Association of School Trustees (MAST) recognize problems inherent to rural education (MASS & MAST, 2006). Wallin (2009) examined rural education in Canada, and in Manitoba specifically. In her report, she wrote that research links between universities and rural school divisions could help to meet the goals of Manitoba Education. In another report for MASS, Wallin (2006) stated, “The stories of those who live and work in rural communities must be shared widely to bring to the attention of people their successes” (p. 5). Wallin (2009) also pointed out that the use of ICT is growing in rural Manitoba schools, but it is uneven. This research affords a close look at some of the ways that educational technology, and in particular social media, are actually being used in rural schools, especially if, as Wallin (2009) stated, these schools are innovative by nature. By centering this research in rural Manitoba, I have endeavoured to address the goals of educational groups in Manitoba, from Brandon University to Manitoba Education. In addition, the proximity of such a location facilitates for rich, detailed description and meaningful interpretation made possible through in-depth data collection.

The major criterion for the participants desired for this study was that the teachers had to be planning to implement, or already be using, social media in their practice. As described earlier, I started the process with the desire to include teachers with a range of experience using social media for teaching. In addition, a number of the characteristics for determining the individual cases for this study were modelled on the study of technology integration conducted by Coppola (2004). The following list of desired characteristics was set out at the start of the study:

- The teachers should be located in a school (or schools) located in rural Manitoba.

- The participants should teach at the grades 7-12 level. This is the age group most likely to be using social media. Many of these media have a minimum age requirement of 13 years old.
- Teachers and students should have good access to technology (easy access to hardware and to broadband connectivity), so that “teachers could focus on learning” (Coppola, 2004, p. 155) and not on gaining access, and other related problems.
- Teachers and students should have access to the social media tools that they require without undue constraints (filtering).
- The teachers must be willing to learn about and use various types of social media in their practice.
- Teachers do not have to be expert users; however, it would be preferable if they have at least minimum level of computer and Internet skills.

Selection and Consent Process

In order to find a suitable site and teachers meeting the criteria, purposeful sampling was used, as explained earlier. The researcher’s knowledge of the region and conversations with a variety of people were used to determine possible candidate school divisions and schools. These contacts included Manitoba Education personnel, school division computer consultants, superintendents, and other knowledgeable educators. School and division web sites in the region were also explored for information.

Once some possible sites were identified, the first step was to contact the school division superintendent for permission to proceed and to determine if there were any special protocols to follow in regards to teachers taking part in research, for example, if

informing the Board of Trustees was necessary. This contact included a letter and consent form (Appendix A) that included an overview of the study and information, such as the expectations of participants. The letter asked the superintendent for permission to undertake the study in the school division and for permission to proceed to approach the school principal and teachers. Using this procedure, the first school division contacted resulted in a meeting with the superintendent and subsequent consent to approach school principals.

Once this approval was obtained, arrangements were made to meet with the principal of the first school to be approached, in order to discuss the study and to seek consent to approach teachers. A letter and consent form similar to the superintendent letter were given to the principal (Appendix B). Since it was likely that the principal would know which teachers were taking part in the study, a statement was included to ensure both confidentiality and no repercussions for either taking part in the study, or not taking part. Once consent at this level was received, the principal was asked to distribute an invitation to participate, in the form of a letter, a one-page description of social media, and a consent form (Appendix C) to the grade 7-12 teaching staff, in order to seek volunteers who met the criteria. The information in this letter included an introduction to the researcher, the purpose of the study, the expectations of the participants, including time commitments, and other important information as required by Tri-Council policy (Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, and Social Sciences and Humanities Research Council of Canada, 2010). These conditions included confidentiality, anonymity in any dissemination of data and results, description of risks and benefits, the right of withdrawal without penalty, the

right to refuse to answer any questions asked in interviews, and information about the dissemination of results. The consent form, explaining all the requirements, as described previously, of the Tri-Council protocols for research involving human subjects, was provided with the letter.

Signed consent forms were returned to the researcher in a provided sealed envelope. Subsequently, all signed consent forms were stored in a file cabinet in the researcher's locked office at Brandon University. This process resulted in nine enthusiastic volunteers in the first school approached, including participants with the desired range of experience using social media in the classroom. The participants included four female and five male teachers with teaching experience ranging from 7 to 35 years.

Data Sources and Collection

The design of this research included several types of data collected from a variety of sources. Diverse data are an important characteristic of qualitative case studies (Creswell, 2012, 2007; Willis, 2007). Yin (2009) pointed out that the data collection procedures in case studies are “*not* routinized” (p. 68), often taking advantage of opportunities that arise. Plowright (2011) identified three types of data collection in research: observations, asking questions, and artifact analysis. One of the main differences in these three methods is the proximity to the phenomenon under study, with observation being closest and artifacts being the most distant (Plowright, 2011). Data sources for this study included a series of interviews, both formal and informal, relevant school and classroom documents, and, where applicable, social media interactions. Direct classroom observations were not part of the data collection due to ethical considerations

(observing minors) and that this research was undertaken from the teachers' perspective. In addition, the school principal was asked to provide details related to the school context, as well as his thoughts about the use of social media. Studies by Allen (2008), Coppola (2004), and Moayeri (2010) used similar data sources in their studies of educational technology use by teachers.

Collecting data from a variety of sources and over multiple interviews helps to create a more valid study in that it may act to reduce the occurrences of "'demand characteristics,' or the tendency of research participants to anticipate the goals of the researcher and attempt to satisfy those goals" (Kendall, 2008, p. 134). Several sources also generate triangulation of data. Kendall (2008) suggested that new media studies often use in-depth interviews along with other data sources, in order to check interpretations, to gather other information, such as historical and biographic information, and to help determine the meaning of observed behaviours. A rich approach to data collection, as described in this section, is required in order to provide a detailed description and interpretation of the phenomenon being studied. Darke, et al. (1998) suggested that interviews are the primary source of data in interpretive case studies such as this, since they are the best way to access the perspectives of participants. In this study, the primary source of data was a series of interviews held over an extended period of time. This method engendered in-depth conversations yielding rich data over a period of time. In addition, multiple interviews are often conducted for phenomenological research (Creswell, 2007). In this study, the researcher collected all of the data and thus was "the primary instrument for data collection" (Merriam, 2009, p. 15), which produced a deeper

understanding of each case. Data collection took place over a 6-month period – just more than half of a school year.

The remainder of this section of the chapter describes each of the data sources. Reasons for each source's inclusion and some of the details of construction and collection are provided when applicable. Interview protocols are included in the appendices at the end of this dissertation (Appendices E - G).

Interviews

Personal interviews with the participants were the major data source that informed each case in this study. Interviews are a key part of qualitative methods since, more than any other method, they facilitate “the exploration of meaning, especially as meaning is constructed by the research participants” (Kendall, 2008, p. 133). Interviews were a combination of semi-structured and unstructured in format (Creswell, 2012). Semi-structured interviews are interviews that include planned questions, but are dialogic and allow for probing and follow-up questions (Kendall, 2008). Thus, questions were created to guide the interviews. However, in order to allow for emic knowledge, each interview was allowed to take on different directions to respond to the unique experiences of the individual participants. The conversation would then include points that the participant found of value, not simply follow the direction set by the researcher.

One way to consider the interview design is to think of it as one extended conversation divided into several parts, taking place over the course of the study. In reality, there was a series of semi-structured and unstructured interviews conducted for each case. In this study, the initial plan was to carry out an interview session approximately every three weeks on a schedule agreed upon by each participant and the

researcher. All interviews were audio recorded and transcribed. The intention was to conduct the interviews face to face, with each one lasting between 15 minutes to an hour. The process of interviewing used for this study has precedent. Moayeri (2010) and Coppola (2004) used a series of formal and informal interviews and discussions. Allen (2008) used a similar pattern, using a series of three interviews over the course of the study. Her study, however, was done at a distance using technology.

Creswell (2012) provided a checklist of general steps for conducting interviews (pp. 220-222), which acted as a guide for conducting these interviews. These suggestions included taking notes, selecting a quiet, suitable site for the interview, being flexible in regard to the direction of the conversation, and using probes to clarify points made. The use of probing questions as a means to seek clarification and obtain more information was also suggested by Merriam (2009); however, these are usually not possible to prepare ahead of time. An interview protocol, as suggested by Creswell (2012), was created to guide the interview process. This protocol is a printed page with guiding questions, where applicable, and space for recording notes and observations during the interview (Appendices E - G).

All interviews were recorded digitally on a portable voice recorder (specifically, a recording app on an iPhone), and subsequently transcribed by a trained transcriber who signed a pledge of confidentiality (Appendix D). Participants were made aware of the use of a transcriber in the consent form. After verification of the transcripts by the researcher, they were then sent to the participants for member checking. Paper copies of transcripts are stored in a locked file cabinet in the researcher's office at Brandon University, when

not being used, and will be destroyed by shredding after three years. Digital transcripts and audio recordings are stored on the researcher's password-protected computer.

Initial interview. The initial interview with each participant was semi-structured and more detailed than the intermediate interviews. This was done in order to obtain demographic and background information about the participant. The questions (found in Appendix D) were partly based on interview questions used by Allen (2008), Chen and Bryer (2012), Coppola (2004), and Miller (2009). It should be noted that, in general, all interview questions were created to fit the research questions by the researcher. However, many were adapted from the studies mentioned. In addition, Merriam (2009) provided information on developing good interview questions, and types to avoid, which assisted in formulating questions. The questions were designed to obtain detailed information about the teachers' background and reasons for using social media in their practice.

This interview consisted of five sections. The interview began with a review of the study's purpose, participant rights, the expectations for the study (i.e., further interviews and document sharing), and a chance for the participant to ask any questions before starting the study. The second section contained a few initial questions used to gather basic demographic data, such as grade level taught, subject area taught, and number of years teaching. In the third section, the questions turned to the teacher's thoughts about his/her teaching philosophy. This section of questions were asked to gain a sense of the teacher's teaching beliefs and strategies, in order to build the context for the case and to prompt the teacher to reflect on changes that have taken place over his/her career. The fourth section addressed the teacher's use of educational technology, and included questions asking about his/her comfort level and experience with educational

technology. The final section of questions were specifically about social media and included questions about the teacher's goals, what he/she hoped to accomplish by using social media, which tools he/she planned to use, issues encountered or foreseen, and areas about social media that he/she would like to learn about.

This interview served several purposes: to develop a relationship with the participant, to establish a starting point, to obtain information about the teacher's current practice, and to determine the teacher's reasons for using/wanting to use social media in the classroom. Some questions in sections two to four were based, in part, on those used by Coppola (2004, pp. 159-160). The interview protocol used by Allen (2008, pp. 423-424) was instrumental in thinking about and designing many of the questions used in each of the protocols, in part because the topic addressed was similar to this study. To a lesser extent, questions used by Miller (2009, pp. 176-177) were also informative to mine, in particular questions 7, 8, 11, and 12

Intermediate interviews. These interviews, held approximately every three to five weeks, were much shorter in duration, were unstructured, and concentrated on the teacher's activity and reflections over this period. These interviews were more of a conversation about the ways that the participant had been using social media, and his/her reflections about it. The questions (Appendix E) served simply as a reminder to ask the participant about his/her use of social media in the period since the previous interview. Probing questions often included the following: Did you make use of any social media in the past few weeks? If so, describe the use? Why did you choose this media for this purpose? How did you learn about this medium? What happened? Would you do this again? What would you change? How did students react?

The final question at each of these sessions asked the teacher to look forward: What do you have planned? Why? What do you think will happen? Any plans would then be revisited in the next interview session. Occasionally related issues, such as cases of cyberbullying that were in the news, were a topic of conversation. The data from these interviews allowed the description of actual events in the classroom and prompted the teachers to reflect on their use of the media in teaching, as well as the results of doing so, on an ongoing basis.

Informal conversations. In addition to the interviews, the researcher was available at other times for informal conversations at the participants' request. These informal conversations sometimes took place through social media (for example, using Twitter), through email, or face to face. The informal conversations were not audio recorded; however, field notes were kept about these conversations.

Final interview. The final interview in the series (Appendix F) included questions similar to the ones in the series of interviews described above, but was more structured and longer in duration. The questions were designed to prompt the teachers to reflect on their learning, experience, and any possible changes to practice that resulted over the course of the study, about half of a school year. This interview was based loosely on instruments developed and used in studies by Allen (2008), Chen and Bryer (2012), Coppola (2004), King (2009), and Miller (2009).

This final interview session consisted of questions that asked the teachers to talk about the use of social media in their practice. The questions asked the teachers to share their overall experience and to elaborate on anything more that they might want to add, based on previous interviews. Further questions asked about both positives and negatives

resulting from the use of the media. Several questions asked about observable effects on student learning. Some of the questions asked were slightly modified from a questionnaire used by Chen and Bryer (2012, p. 104), in particular their questions numbered 1, 2, 4, 5, 6, and 8. Other influences were discussed earlier under the initial interview section.

Finally, questions that attempted to find out about changes that may have occurred in the teachers' own thinking and practice were asked. These particular questions were influenced by King (2009), not so much for the wording but for asking participants to reflect on changes in their practice, both over their careers and over the course of the study. This set of interview questions was emailed to participants beforehand so they could review them, if they so wished.

Pilot Testing. Pilot testing the interview protocols was recommended by Creswell (2012) and Plowright (2011). In this study, the interview protocols were pre-tested by piloting with two volunteers, colleagues with relatively recent experience teaching in public schools. The pilot served to test the protocol(s) for the approximate time required, the clarity of questions, and whether the guiding questions were useful for eliciting data. The pilot also provided an opportunity to practise the procedure and use probing questions (Merriam, 2009). Refinements, made as a result of the pilot before the actual interviews commence, can serve to increase both reliability (trustworthiness) and validity of the instrument. In addition to being piloted, the interview protocols were also shared with an acquaintance, a professor of educational technology at a nearby university, for feedback and comment. As a result of these pilot activities, a few questions were re-worded for clarity on the final interview protocol. Specifically, question 7a was changed

to read “engagement,” question 7e on the final interview was split into two questions, 7e and 7f, and was reworded to make the meaning of the question clearer, question 8 was clarified, and question 9b was changed to read “approach to teaching” (with “teaching style” in parentheses). The changed questions appear on the final interview protocol (Appendix F).

Documents

In addition to the in-depth interviews described earlier, several types of documents were collected for background and to supplement the interview data. These included publicly available documents, such as school newsletters, web sites, and policy statements, which provided important contextual background about the school and division, in which the cases under study (teachers) were embedded.

Additional documents requested from participants included copies of course outlines and any assignments or activities used by the teacher that made use of social media. It was hoped that these documents would provide important information about the ways social media are actually used in the classroom. Unfortunately, in every case, the course outlines did not include information about the teachers’ use of social media.

In this study, important information was also obtained from the online spaces frequented by the research participants, especially those who used social media for professional purposes. One of the key aspects of the research question is social media, so what better way to make observations and collect data than observing the actual use of the media? Consent to access and “follow” the spaces used by some participants was secured, although most of these spaces were already public. These included Facebook

pages, Twitter accounts, and blogs. These spaces were valuable additions to the interview data.

Summary of Data Collection

Data sources used in this study included the following: an ongoing series of semi-structured and unstructured interviews, informal conversations, and a variety of documents, including online spaces used by the case teachers. The various data sources described in this section engendered triangulation of the sources, which adds to the trustworthiness and legitimacy of the research. More importantly for case studies, the in-depth, ongoing interviews generated a “richly descriptive” study (Merriam, 2009, p. 39) leading to a more complete understanding and interpretation of the phenomenon under study.

Data Analysis

Qualitative research is often characterized as emergent in nature. As a result, Merriam (2009) posited that data collection and analysis should be simultaneous and continuous, the goal of which is simply to “make sense of the data” (Merriam, 2009, p. 175). In this way, codes and themes, which Ryan and Bernard (2003) claimed are basic to qualitative research, can emerge from the data and be member checked while collection is still in progress. As well, emerging codes may spur further data collection, leading to a more complete and accurate description of the case. This process was followed as much as possible during the data collection phase of the study. After the interviews took place, they were transcribed, checked for accuracy, and sent to participants for member checking. As well, the transcribed data was entered into two qualitative research software applications: Tropes, free software for analyzing text (<http://www.semantic->

knowledge.com/tropes.htm), and NVivo. (Brandon University has several licenses to NVivo software for faculty use.)

Data analysis included a description of each case (teacher) and the school community in which they were embedded, as suggested by Creswell (2007). This description includes features of the school site, such as demographics, relevant policies and vision. Each case description includes the background of the teacher, with historical information about his/her teaching career, philosophy of teaching, and comfort and experience with technology, including social media. This context is summarized in chapter four, with more detailed sketches of each participant included in Appendix H.

Another key part of data analysis is managing the data (Creswell, 2012; Merriam, 2009), especially with a wide variety of data collected and for several cases. Provisions were made to secure and store the data in an organized way, with backups. Keeping track of and organizing the data is also an important task. To assist with this, a spreadsheet was created to track and organize all interviews, documents, and other important data. Brief descriptions, dates, times, and locations were kept on this spreadsheet. Using these organizational steps, any piece of data could be found and pertinent details noted easily. As well, information related to a particular participant was assigned a pseudonym rather than the participant's actual name, thereby adding another layer of confidentiality to the data.

Analysis Process

The process used to guide the analysis of the data in this research was based on the “constant comparative” method described by Merriam (2009). Essentially this is thematic analysis. According to Merriam, “all qualitative data analysis is primarily

inductive and comparative” (p. 175). Toward the end of the analysis, the process becomes deductive as evidence is fit into the categories, or themes, created through inductive comparison. Ryan and Bernard (2003) stated, “You know you have found a theme when you can answer the question, what is this expression an example of?” (p. 87). The data-analysis spiral suggested by Creswell (2007) is a good model of the process that was used. This spiral “moves in analytic circles, rather than a fixed linear approach” (p. 150). With this spiral approach, data analysis is ongoing throughout the project, with a continuous process of reading, memoing, reflecting, and coding in a spiral that ends with the account of each case.

Coding is perhaps the key part of analyzing qualitative data, since it is this process that is used for “noticing relevant phenomena, collecting examples of those phenomena and analyzing those phenomena in order to find commonalities, differences, patterns and structures” (Basit, 2003, p. 144). Ryan and Bernard (2003) suggested many techniques for analyzing data, several of which were used in this analysis. These techniques included the following: creating word lists, which is basically looking at word frequencies, looking for repetitions in the data, looking for metaphors or analogies, looking for similarities and differences, and looking for theory-related content. Merriam (2009), also suggested that the research purpose should be kept in the forefront during analysis, in a method called structural coding by Saldana (2013). This process was repeated using both manual and technological means until coding and consolidation into themes was complete.

Validity and Reliability (Trustworthiness)

Issues of validity and reliability are important in research. However, their meaning in qualitative research is different than that used in quantitative, positivist studies (Creswell, 2007). Both terms can be problematic when applied to qualitative studies. The issue comes down to the idea of trust. How trustworthy are the findings? How accurate is the account of each case? Reliability in qualitative studies is a question of consistency, and validity is about credibility. The reader will be interested in knowing whether the data are credible and whether the findings are consistent with the data collected (Merriam, 2009). Whatever we call these concepts, they need to be addressed in research design.

Qualitative researchers use several methods to increase validity and reliability:

- triangulation of data (Creswell, 2012; Creswell, 2007; Merriam, 2009; Stake, 2005; Willis, 2007)
- participatory research in which participants are involved in formulating conclusions (Willis, 2007)
- peer review, which refers to involving other scholars in the research (Creswell, 2007; Willis, 2007)
- researcher journaling or reflexivity (Merriam, 2009; Willis, 2007)
- clarifying bias (Creswell, 2007; Merriam, 2009)
- ensuring adequate time in data collection (Creswell, 2007; Merriam, 2009; Willis, 2007)
- member checks or respondent validation (Creswell, 2012; Creswell, 2007; Merriam, 2009; Willis, 2007)

Creswell (2007) advised that researchers should use at least two of these methods in any study. In this study, several methods were used to ensure validity and reliability. These methods included researcher reflexivity and clarifying bias, triangulation, and member checking. Additionally, as described earlier, the interview protocols were, in part, based on previous studies and were piloted before the actual study began, thus leading to a more reliable instrument for data collection.

Merriam (2009) suggested that the integrity of the researcher is important to establishing the trustworthiness of qualitative research. She then contended that one way to achieve this is through researcher reflexivity, including the recognition and articulation of biases and assumptions. This is something that was described in chapter one, and continued throughout the course of the research. Such declarations and openness will assist the reader in understanding discussions about the data. An audit trail (Heath, 1997) was also created, using a journal in which notes of research activities, changes to interview questions, decisions, and other notes were kept.

Another type of validity is explained by Plowright (2011), who wrote about the importance of ecological validity, that is, a “concern with the degree of naturalness of the research location and situation” (p. 30). This study examined the case teachers’ actual practice, studied in their naturally occurring, real-life context. Such cases would have high ecological validity. The ongoing, prolonged nature of the interview process, consisting of several parts, helps to build a relationship of trust and understanding between the researcher and participant. This, in turn, adds a depth and richness to the data, which adds to this validity, or trustworthiness.

Perhaps the most commonly used strategy is triangulation (Stakes, 2005). Triangulation in this study was performed in two ways. First was methodological triangulation (Willis, 2007), in which data is collected using several methods. The methods included interviews consisting of several sessions, a wide variety of documents, engaging in online interactions when possible, and informal conversations with case teachers. In this way, anything missed by one method may be visible in another, presenting a more complete description of the case. Additionally, nine case teachers were used as sources of data for comparison. Member checking was also used as a method of increasing the accuracy of the findings. Participants were provided a transcript of interviews and asked to check them for accuracy and completeness. Finally, as a result of the prolonged series of interviews, emerging interpretations could be shared and discussed with participants, facilitating validation of understandings. In addition, themes were shared with participants for further comment as analysis drew to a conclusion.

Ethical Considerations

Merriam (2009) confirmed “ensuring validity and reliability in qualitative research involves conducting the research in an ethical manner” (p. 209). Conducting research ethically and with integrity reinforces a trustworthy account. This research was vetted through the University of Manitoba’s research ethics board and, as the place of my employment, the Brandon University research ethics committee. (Ethics certificates are included in Appendix H.)

Approval and informed consent were obtained initially through the gatekeepers (Creswell, 2012) of the community in order to begin data collection. The gatekeepers in this study were the administrators at both the division and school level. Their signed

consent included statements of confidentiality that ensured that there would be no repercussions to those declining or agreeing to be part of the study.

Consent letters were used, and included statements relating to confidentiality, potential risks and benefits, purpose and procedures, and the right to withdraw from the study at any time, as outlined by Creswell (2007) and required by the Tri-Council Policy Statement (2010). The study did not involve deception of any form. Member checking was used to ensure that participants had the opportunity to examine the transcripts of interviews for accuracy and to allow them to omit any sections that they felt would compromise their privacy. As well, pseudonyms have been used for the division, school, and individual educators in this dissertation, and will be in all published/unpublished accounts of the research, ensuring anonymity.

I strove to do my utmost to conduct all aspects of this research rigorously, ethically, and with integrity. Throughout, I expected and demanded that I act with kindness and respect in all of my dealings. The result is, hopefully, a trustworthy description and interpretation of the case.

Summary

This chapter included an explanation of the methodology, data sources, and analysis procedures. This research used a qualitative case study methodology to study the phenomenon of teaching using social media. After obtaining ethics approval from both the University of Manitoba and Brandon University, the first step to use qualitative case study methodology was the selection of the cases. This process was accomplished using purposeful and convenience sampling. A single school was found with nine grades 7-12 teachers who met the selection criteria and wished to participate in the research. All of

these teachers were either using, or planned to use, social media in their teaching practice.

Once the cases were determined and written consent was obtained, data collection took place over a period of approximately six months. Data sources were diverse. The main source of data was a series of semi-structured and unstructured interviews, adding to a rich, detailed case study and interpretation. Other data sources included the following: informal conversations, background from the school principal, and several types of documents, including, where applicable, online interactions. Details of each of these collection methods were described in the chapter. The variety of sources and depth of data also engendered a degree of triangulation and a more valid and reliable study. Analysis of data used a constant comparative method and thematic analysis. Tropes, and especially NVivo qualitative analysis software, were used to assist in data analysis. Finally, ethical considerations that could affect the study were discussed.

Chapter 4 includes a more detailed explanation of the analysis process, description of the study context, and examines the data as they relate to the research questions. Chapter 5 includes a discussion of the results, significance of this research, implications, and conclusions.

Chapter 4: Findings

This study used a qualitative, interpretivist, multiple case study methodology to examine nine teachers' use of social media in their teaching practice. These teachers were also embedded in a single school in rural Manitoba. In this chapter, the data collection procedures are reviewed followed by a description of the context of the study. This begins with a description of the school in which the participants (teachers) were working, related outside influences, such as division policy and priorities, school technology, and the views of the principal. This description is followed by a brief summary of the participants (cases) who took part in the study. It should be pointed out that pseudonyms are used throughout for the names of the school and the participating teachers, in accordance with the Tri-Council Policy Statement (2010). The remainder of the chapter examines the data analysis procedures, followed by presentation of the data, that is, what the teachers' stories tell us. This includes a summary of the themes that emerged from the analysis, followed by a presentation of the data as they relate to the themes and research questions.

Participant Selection and Data Collection

Using purposeful and convenience sampling, as described in chapter three, the first school division contacted resulted in a meeting with the superintendent. After receiving consent to proceed, the principal of the first school was contacted and resulted in nine participants meeting the established criteria. The participants were grade 7-12 teachers, and included five male teachers and four female teachers. Data collection began with an initial interview, collection of relevant documents, including school and division policies, vision statements, and permission to observe online interactions related to

participants' use of social media in their practice. Most of the relevant documents were easily found online; those not easily accessible were requested through the participant or the school principal. In addition, details of the school's technology (infrastructure, availability, etc.) were gathered through discussions with a lead technology teacher, who was also a participant in the study. The school principal was interviewed as a means of collecting information about school technology, priorities, and school environment.

Periodic interviews with each participant took place, however, in reality, the gap between interviews was three to four or five weeks, due to the nature of teaching. Certain times saw the teachers preoccupied with activities such as parent-teacher interviews, exams, or extra-curriculars. In a few cases, participants were contacted via email and were not available to meet for a regular interview session. Over the course of the study, each participant was interviewed five or six times. All the interviews, with one exception, took place face to face. Each interview took anywhere from about 15 minutes to an hour in length and took place at a time and place convenient to the participant, which, in all cases, was in the school during school hours in free time, or on the teacher's own time after hours. All interviews were audio recorded and transcribed. Digital copies of the interview transcripts were verified by the researcher by reading the transcript while listening to the recording, and then were provided to the participant for member checking.

The invitation and opportunity for informal conversations between formal interview sessions were provided, as described in the initial proposal. Overall, however, there were few such interactions between scheduled interviews, but some exchanges did take place, usually by email or Twitter.

The Context

This study was undertaken using a qualitative, interpretivist, multiple case study methodology. The nine participants, embedded in their particular context, constructed their view of reality as they explored and implemented the use of social media. Their stories and perceptions, along with related documents, enabled a study of the phenomenon under study – social media use in teaching. This section of this chapter gives the context of the cases, including a brief description of the school, outside factors that have been part of the discussions with the teachers, and a summary of the participants.

This study was conceived as a multiple case study with each case teacher having her/his own story to tell, based on her/his own particular background, teaching philosophy, and pedagogical approach. All the participants taught in a similar context: the same school, school division, and province. Figure 2 (p. 107) illustrates this situation in a visual way. This embedded nature facilitated a comparison of the cases, finding points of similarity as well as differences.

Prairie School

Prairie School (pseudonym) is a rural school located in a small town in rural Manitoba, Canada. Prairie School includes all grades from kindergarten to grade 12 and has a population of approximately 400 students. The school has a history of being recognized as innovative, gaining national and provincial recognition in the past. The participants in this study were all teachers in grades 7-12, although one of the teachers also taught some primary physical education. At the time of this study, the school was guided by a full-time principal and a half-time vice-principal and had a teaching staff of

26 full time equivalents (30 teachers) and 13 educational assistants, along with office and custodial staff. The school is organized around three areas: early years, kindergarten to grade 4; middle years, grades 5-8; and high school, grades 9-12. Some teachers teach across these grade divisions.

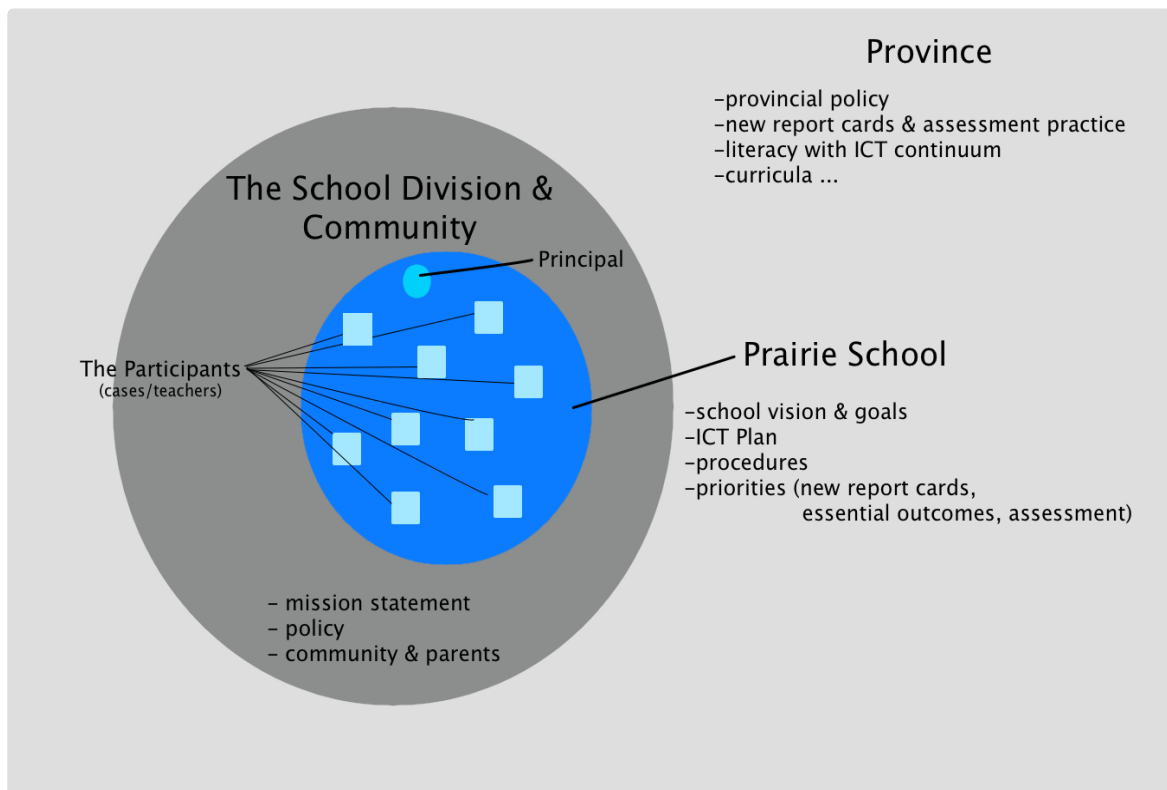


Figure 2. Visual representation of the research context.

The vision statements of the division and school are focused on students. The school's goal is to "empower all students to succeed" and includes a statement that "we believe all students can learn and are the focus of our efforts." This aligns with the school division's mission, which includes the statements that "the students are the focus of all our efforts" and that "the division strives to provide an education that prepares

individuals for a meaningful life in a changing world.” Prairie School’s principal added that the school priorities, current at the time of this research, were related to implementing an essential outcomes model and improving assessment, especially with new provincial report cards being implemented.

According to all of the research participants, the school had a very positive environment. Words used by participants to describe the school environment during the first interview included the following: positive, welcoming, innovative, fortunate, productive, progressive, comfortable, and relaxed. Relationships were often mentioned as being important to the school community. One participant, Frank, summed up these thoughts,

The kids are comfortable . . . I think this is a place where staff tends to work with kids instead of direct [them] and I find this place very flexible and very progressive. There is not a lack of trying new things and I haven’t heard anybody, yet, being discouraged from trying something different, so it’s a good place.

The principal provided that extracurricular activities formed an important part of the school culture, with 82% of students in the high school participating. In this regard, one participant stated that the school “was not always as academic as some,” but added that the school environment was “positive; the students are easy to work with, for the most part. I think we try to do good things for the students.”

Technology

An important part of the school environment was the use of technology. When asked to describe the school environment, four of the participants talked directly about the important role that technology played within the school. One participant, Ann, put it

this way, “I would say a big focus in the last several years has been ICT and using it as a tool to engage kids, but also to make them good learners in the present century.” All of the participants made use of technology in their classrooms, although they professed to be at a variety of levels in terms of being proficient with technology. Technology use within the school was guided by a variety of documents and policies. These included a division-wide ICT plan, which contained goals related to the teaching of digital citizenship, appropriate use of social media, and “media fluency.” The plan also embraced the vision of moving to a 1:1 device-to-student ratio, with provisions for students using personal devices in the classroom. Prairie School also had a detailed ICT plan which included a vision that stated, in part, that “both students and staff have the opportunity to use and access technology in an equitable and appropriate manner.” In addition, there were procedures for technology use within the school, division-wide policies for the use of the Internet by both students and employees, and an acceptable use policy for using mobile devices.

Within Prairie school, two teachers were allotted some of their time to act as lead technology teachers, assisting other teachers to integrate technology into their classroom practice. In terms of infrastructure, the school had high speed Internet access with both wired and Wi-Fi connectivity throughout the school. Every teacher was supplied with a laptop computer. In addition, there were three labs with 25 computers in each, and every classroom from kindergarten to grade eight had one or two computers and a digital camera. In addition, there were mobile carts with netbooks and laptops, 15 more laptops were spread around various classrooms, and each of the two resource rooms had at least six computers. The senior years science classroom had recently been given six iPads for

students to use, the resource teachers had a further five iPads, and three android tablets were also available to be used. In various classrooms throughout the school, there were also 10 interactive whiteboard devices and 10 document cameras.

One of the participants, Joseph, who had also been the senior technology lead teacher for a number of years, estimated the computer to student ratio at 1:2. Joseph, along with the school principal, had been promoting the idea of students using their own devices in accordance with the school division direction. Several of the study participants have embraced this notion and have been allowing students to utilize their devices, primarily smart phones, in their classrooms. Although Prairie School had a seeming abundance of technology access, Joseph commented, “Even though I said before we are pretty fortunate in terms of the technology we have here, a lot of it is starting to get dated and the cost of replacing equipment is really high.” He then suggested that having students bring their own devices could be a part of the solution to this problem.

The Principal

An important aspect of the school context is the school leader, the principal. This section briefly describes his thoughts about the school and the role of social media. The principal of Prairie School had been an educator for 31 years, the last five as principal. In discussing the school environment, he talked about various initiatives meant to engage students and keep them interested. Some of these initiatives included an advisory system in the high school, a varied extracurricular program, and an arts and culture program, in addition to academics. He described good teaching as being about relationships, having clear expectations, and making use of formative assessment. He added “Now, they

[teachers] are using technology as a tool to help them reach those goals in different ways.”

The principal was a proponent of the use of technology for communicating as well as a “tool” in the classroom, and he attempted to be proactive by providing students and teachers with what they needed. Support for teachers was also given in the form of professional development time and technology lead teacher time. The principal was supportive of students using their own devices and of the use of social media, pointing out that some teachers were using blogs and Skype to connect outside the classroom. In terms of using social media for teaching and learning, he said he still “struggles with that part of it,” stating that using it for collaboration has potential, but he was not seeing enough of it as of yet. Summing up his ideas about using social media, he said,

I just personally think the ultimate end to this is that we have got our classrooms collaborating better together and doing that outside the classroom, and so, if it is through Google Docs or whatever they are using, it’s a huge thing that can happen. I think blogging can be pretty valuable, as long as they are taking it outside their classroom . . . it needs to move that direction. To be creative enough and willing enough to involve themselves with people in other areas of the world.

When asked if he had any concerns about the use of social media, the principal answered, “No. The only thing that would bother me is the inappropriate use.” He stated that he believed that teaching and modelling are the solution to the issue, not banning it. He explained that when issues arise he would “address them when they come my way and just . . . you know, keep that faith in students and teachers and parents, that they’re doing what they can to address [the issue].”

The Participants: An Overview

This section provides a general description of the participants. A more detailed sketch of each participant can be found in Appendix H, for interested readers. Of the nine participants, five were male and four were female. Their teaching experience ranged from James, with seven years teaching, to Ann who had taught for 34 years. Most of the teachers in this study taught primarily in grades 9-12 with a few exceptions. James taught physical education and health from kindergarten right up to grade 12, Joseph taught grades 7-12 industrial arts, and John taught most subjects in grade 8. As mentioned earlier, both Joseph and James had also been allotted time in their schedules to assist other teachers in the school with integrating technology. The other participants taught a variety of subject areas, including English (Ann), various sciences (Mary, Sally), business education (Nancy), and mathematics (Frank, Mary). Ann, it should be noted, had a wide range of experiences teaching at all levels from kindergarten to grade 12, and she had spent time as a resource teacher and as a vice-principal in the past. These teachers had all made use of technology in their teaching to varying degrees and purposes, and proclaimed a wide range of skills and levels of interest (see Table 2, p. 113).

Table 2 (p. 113) is a summary of the participants in this multiple case study. It provides the participants' years of teaching experience, how they characterized themselves as users of social media, and the major social media that each was using in their teaching. Although the specific types of media used were secondary to the research, it is useful to help in understanding the goals that individual participants had for their use of social media. The self-rating of social media use is in the participants' own words and

is meant to reflect their thinking and not a preconceived categorization. From this summary, we can see the participants provided a variety of backgrounds and experience, both with social media, and teaching.

Table 2

Summary of Participants: Years of Experience and Social Media Use

Name	Years teaching	Self-rating in social media	Main social media used in teaching
Ann	35	“beginner”	Blogging – main project Use of Facebook, Twitter etc. by students for social justice project
Nancy	32	“pretty low”	Edmodo
Anthony	30	“novice”	Google docs among many more
Joseph	26	“not that knowledgeable”	Facebook page (has used many others in the past)
Frank	22	“average ... 6/10”	Twitter, YouTube (also texting)
John	14	“needs to get better”	Blogging
Mary	14	“above very good”	Facebook pages (has used social ‘trivia’ sites)
Sally	13	“beginner”	Google docs, wiki, YouTube
James	7	“very comfortable . . . use it often”	Google docs, Twitter (also texting)

Figure 3 (p. 114) is a concept map that illustrates the various types of social media that the participants used, both personally and in their teaching practice. This figure shows the variety of media that participants were familiar with, even though to varying degrees. Later, the participants’ own conception of social media will be presented, and

interestingly, some were making use of social media without being aware of it. The remainder of the chapter presents more details about the findings, the themes, and the participants' perspectives about their use of social media for teaching.

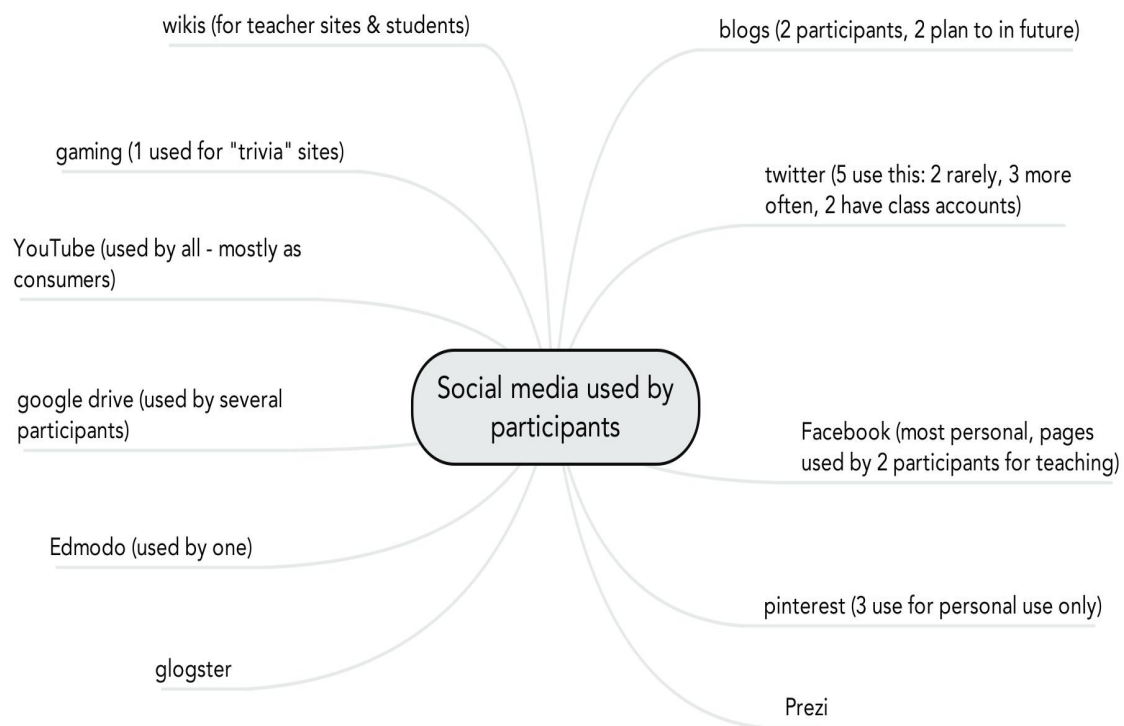


Figure 3. Social media types used by participants.

Participants' Understandings of Social Media

An important consideration with regards to the context of the study is the understanding that participants had about the meaning of the term *social media*. To determine this, participants were asked in the initial interview for their understanding of this term. This understanding is an important part of making sense of, and interpreting, the participants' perspectives of their experiences. In chapter two, the contested, or perhaps confusing, meaning of the term *social media* was explored. Even though a

definition of social media was given to participants along with the recruitment letter (Appendix C), some confusion, or uncertainty, about what social media are, was understandably evident in the perspectives of the participants. Five of the participants answered with the examples of Facebook and/or Twitter, and one mentioned texting.

A common word used to describe the concept, one used directly or indirectly by all but two of the participants, was “communication.” The descriptions of this term were interesting. Using the words of the participants is, perhaps, the best way to hear them:

- Social media to me . . . is just . . . communication is what it is, a different form of communication. (Frank)
- Social media to me is, for lack of a better term, [name’s] coffee shop on a worldwide basis. It is, it’s a coffee shop because you take twenty years ago or this morning at [name’s]; the same thing. The same old guys going, “What do you know? What did you hear?” Now you use Twitter. (James)
- It would be communicating on a mass scale. So, traditionally when we would email somebody or you would send a letter, it’s a one to one kind of thing. But social media is . . . you are reaching out to a large group of people for a larger audience. (Joseph)
- Well, I guess the fact that you are able to connect and interact with people that aren’t there on a social level. Whether it be news of the day or gossip of the day or, yeah, topics and things that are happening, like right then and now. I think that’s the big thing is that it happens right then and there. (John)
- I think just the option for the two-way conversations and communications, the ease of sharing things with each other basically. (Mary)

- I just think about a person using the computer to communicate with somebody else. So to me, social media is different from technology in a sense that it's communicating with another person or with another human being. (Nancy)
- I think of Facebook, Twitter, about connecting, instant access to things like news, information – not just local “our town” – but now global. (Anthony)

While there was similarity in the understanding shown by participants, the range of responses and, in some cases, the narrow conception of the term (Facebook or Twitter) can lead to confusion for teachers who hear from various sources that they should embrace social media in the classroom. Teachers might wonder what using social media really implies for their practice. This important idea is revisited and discussed in some detail in chapter five.

The Data: Participants' Perspectives

This section of the chapter offers an in-depth look at the findings of the study. First is a description of the data analysis procedures, this is followed by an overview of the codes and themes arising from the thematic analysis process. After the themes are introduced, a more complete look at the data is taken, along with numerous examples using the participants' own words. The findings are organized around the themes and how they relate to the following research questions:

1. How, and why, do some teachers use social media as part of their practice?
2. What are some teachers' perspectives of their experience incorporating social media in their practice?
3. What factors support or hinder some teachers' use of social media in their practice?

4. Does incorporating social media into teaching lead to change in some teachers' pedagogical practices and beliefs? What is the nature of this change?

Data Analysis Procedure

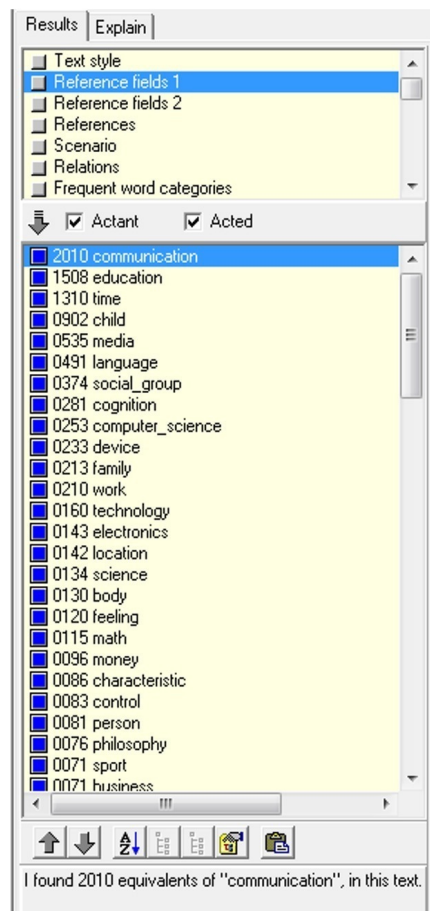
Data analysis proceeded as outlined in chapter 3 following a constant comparative method as described by Merriam (2009). Once interviews were transcribed, the transcript was verified by the researcher, who listened to the recording while reading the transcript. The transcript was subsequently sent to the participant for member checking. Copies of the transcripts were made and thematic analysis began with initial coding and memoing as the material was read. The idea in such an analysis was to think “about what was being said and the meaning and intent of each statement” (Crang & Cook, 2007, p. 137). These thoughts were noted in the margins of the transcript.

In general, after a preliminary look at the data and memoing, a variation of Ryan and Bernard's (2003) “cutting and pasting” technique was used. Instead of physically cutting and organizing, NVivo software was used. Ryan and Bernard also suggested other techniques for finding themes that were used to aid in the process. These included looking at word frequencies which can provide hints for coding, looking for repetitions in the data, looking for metaphors or analogies, looking for similarities and differences, and looking for theory-related content. I also took advice given by Merriam (2009), who suggested that the research purpose should be kept in mind. Coding and consolidating into themes, with the questions in the forefront, is a technique described as structural coding by Saldana (2013). Saldana explained that structural coding is “appropriate for virtually all qualitative studies, but particularly for those employing multiple participants . . . semi-structured data-gathering protocols . . . to gather topic lists or indexes of major

categories or themes” (p. 84). Thus, the research questions were in the foreground as coding took place.

Tropes. After the initial reading of transcripts and memoing, the data were imported first into Tropes. Tropes analyzes textual material by providing word counts, and finding and displaying certain parts of speech. Examples of the type of information provided by Tropes are shown in Figure 4 (p. 119). In this figure, the reader can see that Tropes analyzes the text and finds such things as word frequencies and related concepts. For example, in the figure, *communication* includes concepts related to it, such as conversation and Facebook. The figure also shows word categories appearing in the text, these categories include verbs, connecting words, and so on. While this analysis provided valuable hints for coding, the words were out of context. Words take on different meanings depending on how they are used. Thus, while a useful starting point, the information provided by Tropes was of limited value. Next, word frequency clouds were created and the transcripts were loaded into Nvivo for further analysis.

This screenshot shows word frequencies (& related terms)



This screenshot shows word categories.

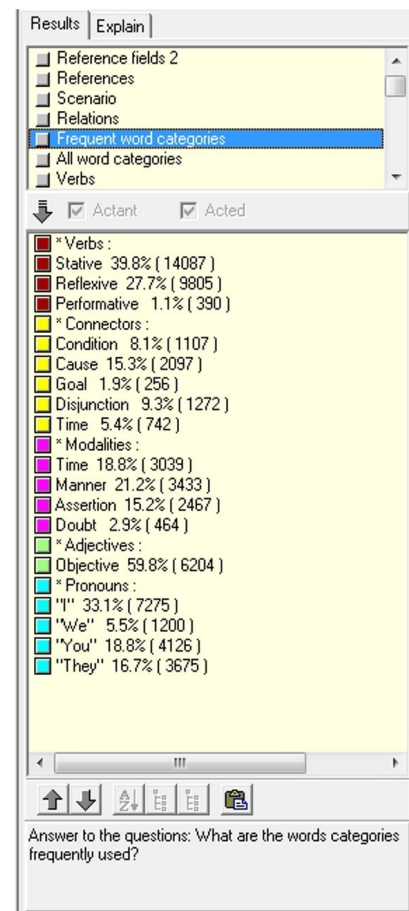


Figure 4. Example of data analysis using Tropes software.

Note: On the left is a screen shot showing word frequencies. (This field includes terms related to the word.) At right is an example showing the most frequent word categories in the transcripts. These examples used all interview transcripts for analysis.

Word frequency clouds. Again, following the suggestion of Ryan and Bernard (2003), visual word clouds were also created in order to examine word frequencies in the transcripts. Appendix I includes word frequency clouds that illustrate the frequency of the top 50 words used in interview sessions. The larger the word, the more frequently it appears in the transcription. The layout of the words in the clouds is randomly generated; only the size of words is significant. Figure 5 (p. 120) shows an example of such a word

frequency cloud for one participant, Frank. The information gained helped in initial analysis. For example, figure 5 shows that Frank often talked about students (kids), the use of mobiles (phone) and texting, as well as Twitter. All of the word clouds found in Appendix I (one for each participant) were created with a Web 2.0 site called Tagxedo (www.tagxedo.com). While NVivo also produces word frequency clouds, Tagxedo offers more control over which words can be ignored, and it also produces a more aesthetically pleasing result. Common English words (such as “the”) were not included in the results. The information provided by Tropes, and the word clouds made with Tagxedo, supplied valuable information and insight. However, they are also incomplete since, as previously mentioned, they miss the context of the conversation that becomes visible when reading a transcript.

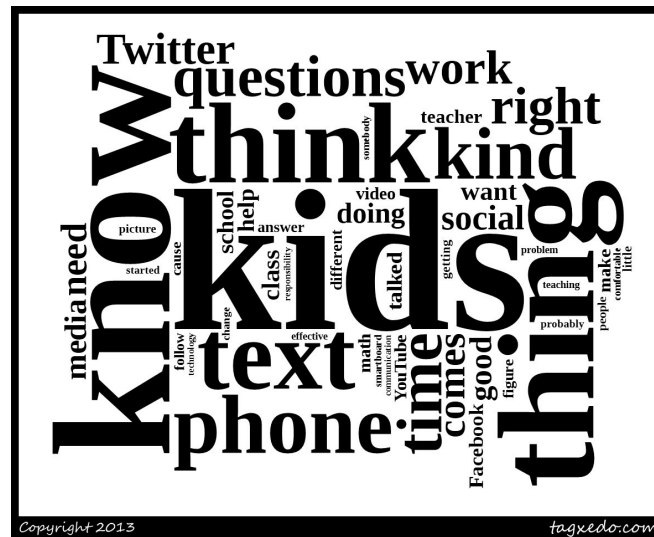


Figure 5. Example of a word frequency cloud for Frank.

Coding and themes. To complete the analysis, Nvivo was used. NVivo enables the user to highlight sections of text and apply codes (called nodes in Nvivo). According to many researchers (Crang and Cook, 2007; Creswell, 2007; Merriam, 2009), analysis

should pay close attention to and note emic codes, those that come from the participants. This is also the goal of phenomenology, to bring the participants' perspectives into the foreground. Coding thus looked primarily for emic coding as a way to let the data, and hence, the participants, speak for themselves. The text analysis in Tropes and word frequency clouds acted to provide some clues for coding. Theory also played a small role in coding in this study. For example, some attention was paid to statements that showed evidence of change in teaching practices and beliefs. A similar process was used by Allen (2008) in determining whether transformative learning was taking place, by looking for evidence of the various stages of transformative learning: disorienting dilemmas, self-examination, critical reflection, and so on. Theory has a place to inform the analysis, but it is important not to let theory speak for the participants. This is what Lather (1991) called construct validity, that is, not imposing existing theory on participants. Coding the transcripts and documents in this manner was a useful way of making sense of the data. A master list of codes was created in NVivo and was easily used for reference and categorizing.

The emerging codes were then used to find patterns in the data through comparison. Following the procedure described by Merriam (2009) and Creswell (2012, 2007), these codes were combined or collapsed into categories, or themes, in an inductive process, reducing them to a manageable number. During this process, the codes were examined for similarities, unique themes, regularities, and codes that related to particular research questions (Saldana, 2013). Using the research questions to help collapse codes into themes or categories is known as structural coding (Saldana, 2013). Merriam (2009) suggested several criteria for constructing categories. The categories should –

- be responsive to the research purpose;
- be exhaustive (all data should fit);
- be mutually exhaustive;
- be sensitizing (be reflective of the data);
- be conceptually congruent (be at same level of abstraction). (pp. 185-186)

Once these criteria are met, it is a signal that analysis is complete. After going through the data several times, it was found that Merriam's criteria had been satisfied. Once categories and sub-categories were identified, the task was, once again, to go through the data and match the data to the categories, providing evidence for them.

These steps can be performed manually or using software to help catalogue, organize, and search through materials. As described, manual memoing and coding were used initially, followed by utilizing NVivo. Using qualitative analysis software, such as Tropes or NVivo, helped to speed the analysis by searching, sorting, and reorganizing the data quickly and efficiently (Basit, 2003). Searches for word frequencies, key words, phrases, comparisons, and other tasks are easily performed by software and can benefit analysis. It was found that a combination of manual and technological methods was a useful way to know the data.

Codes and Themes

Using the process described above, early coding resulted in 78 codes, listed in Table 3 (p. 124), along with the number of sources (interview sessions they occurred in), and the number of references actually made in the data. Overall, there were 47 transcripts of participant interviews entered into NVivo for analysis. It was evident during this process that there were many connections and much overlap in the codes. Following the

procedure described earlier, the number of themes was, eventually, further reduced to nine, as summarized in Table 4 (p. 125) , and described in the sections that follow.

While Tables 3 and 4 indicate the number of sources and references in the data for each code or theme, which is useful during the data analysis, the values must be considered carefully. Creswell (2007), while explaining the value of counts, also urged caution and did not, himself, report such values. He stated, “A code count conveys that all codes should be given equal emphasis and it disregards that the passages coded may actually represent contradictory views” (p. 152). Some of the codes and themes are somewhat related, and provide information relevant to different research questions. For example, a teacher’s purpose in using social media may, in fact, also be a benefit arising from its use, but in many cases the benefits realized by the teachers were not why they initially set out using social media. The theme labeled “appropriate and ethical use” came up several times in the interviews with all participants and is related to more than one research question. Some participants considered this theme as a barrier to social media use, while others saw the same point as an opportunity, or reason to use, social media.

Table 3

Initial Codes

Code (node) name	Sources	References	Code (node) name	Sources	References
communication	27	59	empowerment	5	7
ethics & appropriate use	21	49	danger for teacher	5	8
plans/ideas	17	30	BYOD	5	9
engagement - motivation	16	33	achievement	5	6
change due to ict/sm	16	47	tool to use	4	6
time	15	21	technology access	4	5
purpose of sm	14	25	privacy	4	10
where kids are at	12	24	pragmatic	4	5
collaboration	12	26	modelling	4	6
broader audience	12	29	habit routine	4	11
instant access	11	17	advocacy (SJ)	4	10
assessment	11	18	trust	3	3
technical issues	10	14	'traditional' approach	3	4
comfortable environment	10	11	slow process - steps	3	5
relationships	9	20	safety	3	5
PD	9	21	result	3	3
negative aspect of sm	9	16	reflective learning	3	6
hurdle/challenge	8	10	preparation for success after school	3	4
control	8	10	interaction	3	3
texting	7	8	comfortable with technology	3	4
supports: community, parents, admin ...	7	8	variety of activities	2	4
support person	7	13	innovation	2	2
sharing - links etc	7	10	exposure to new media	2	2
self taught	7	9	drawback	2	2
mobiles	7	13	distraction	2	2
platform limitations	6	10	digital literacy	2	4
personal benefit	6	7	conversation	2	2
paperless	6	6	convenience	2	2
multiple spaces	6	9	cheating	2	3
facilitator - coach	6	6	structured	1	1

connections	6	8	safe environment	1	1
changing attitude	6	10	research	1	1
caution	6	7	late hours for kids	1	1
attitude to tech	6	13	interest - lack of	1	3
access 24/7	6	14	independence	1	1
responsibility	5	9	forced into it	1	1
other priorities	5	8	fear of sm	1	3
learning curve	5	9	entertainer	1	1
inquiry - pbl	5	5	ease of use	1	1

Note. These codes are called nodes in NVivo. “Source” = the number of interview segments a code appears in; “References” = the total number of references to the code; “sm” = social media.

Table 4

Final Categories (Themes)

Category (theme)	Sources	References
Benefits of using sm	39	184
Purpose for using sm	38	147
Barriers/Challenges	35	135
Change	26	101
School environment & relationships	21	63
Ethical & appropriate use of sm	22	59
Supports	17	42
Drawbacks & negatives of using sm	14	24
Assessment	11	18

Note. These categories (themes) include the total number of sources and references in the interview transcripts. “sm” = social media.

Overview of Final Themes

This section briefly describes the themes listed in Table 4 (p. 125). Detailed findings and participant quotes are provided in subsequent sections of the chapter. As noted, the themes reflected, for the most part, the research questions. The themes “purpose for using social media” and “benefits of using social media” are somewhat related. These first two themes involve the participants’ initial reasons for wanting to make use of social media in their practice and the actual benefits that they realized from doing so. For some participants, the reason that they wanted to make use of some sort of social media was also a benefit that they found in practice. For others, the benefits materialized after they began using the media. These purposes and benefits were varied; however, some were common to many participants. One of these was the idea that social media is a major aspect of the students’ world. One participant, Ann, stated, “That’s where the kids are at, they want to be using those tools.”

The experiences of the participants also uncovered a number of barriers and challenges to implementing social media. Many of these issues arose from the double-edged nature of technology, as described in chapter two. Participants also identified a number of things that would act to support their use of social media. These included technology access, professional development, and human support.

While the participants described many benefits of their use of social media, they also found some drawbacks and concerns. Some of these included personal discomfort that some participants had about using social media, the issue of a lack of time, and competing priorities for that time. Another concern that was raised by a few participants

was the wide variety of social media being used, and the effect that might have on their continued and successful use.

The participants' perspectives of their use of social media gave rise to some other persistent themes. One was the appropriate and ethical use of social media. This theme was raised by every participant, and occurs often in the literature as well. Some participants found this a concern and a potential barrier to using social media. The potential for misuse and inappropriate use was described. Other participants saw this as an opportunity to teach and model these skills. Indeed, this outlook was a driving reason for making use of social media in the first place for some participants. Assessment also arose as a theme, which was of little surprise because Prairie School was focusing on assessment practices. Some participants commented how they used social media as an assessment tool in the classroom. In some cases, it was an instrument for assessment, and in another it was a convenient way to provide feedback and help students with their work.

An interesting theme that arose was the perceptions about how using social media affected the school environment and relationships. The ideas of trust, responsibility, and empowerment came up in many conversations. While it appeared that this was already part of the environment at Prairie School, the participants felt that using social media helped to enhance the relationships in the school community. Related to this, and other themes, was the theme of assessment. While assessment was not as predominant as the other themes, it was a topic mentioned several times. As a focus in Prairie School, the use of social media as an assessment tool, and the role of the focus on assessment, arose.

Finally, the theme of change was important. One of the research questions asked how social media use might affect a teacher's pedagogical practice. All participants

spoke of changes in their practice. These changes ranged from the addition of new strategies to their teaching repertoire, to more significant changes in practice and the school environment. These changes are explored in detail, along with other themes, in the remainder of this chapter.

Figure 6 (p. 128) is a concept map that summarizes the themes described here. The arrows on the map indicate connections between the themes. For example, the theme ethical and appropriate use was seen as both an opportunity, and reason to use social media, as well as a barrier to using social media. Similarly, the reasons for using social media were also realized as benefits. The findings described in the following sections use the participants' own words to provide insight into the phenomenon under study – the use of social media for teaching and, ultimately, for learning.

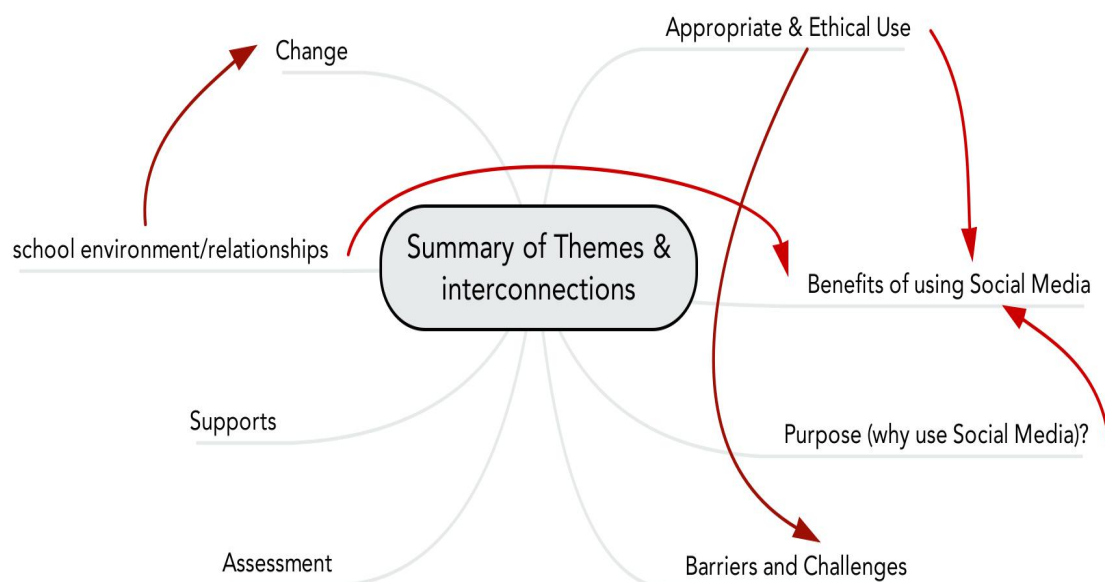


Figure 6. Summary of themes and connections

Reasons for Using Social Media in Teaching

Teachers generally have some reason in mind when implementing something new into practice. A number of various social media were used by the participants (see Table 2, p. 113), but why did they use them? This section explores this theme through the perspectives of the case teachers. The responses reflect the initial thoughts of the participants as they considered their reasons for wanting to use social media in teaching. A number of varied and diverse reasons were given for wanting to make use of social media, including, in no particular order:

- to expose work to a broader audience
- because it is the world of the student (motivation and engagement)
- as another avenue of communication
- to promote collaborative work
- because it was easy and instant access outside of school (both time and place)
- to prepare students for life after graduation
- for research
- to promote reflective learning through blogs and portfolios
- as a way to go “paperless”
- for advocacy (to raise awareness for social justice projects)

Some of the major, and more common, reasons will be presented in turn.

Students are using social media. For one participant, Ann, the feeling was that she was, in a way, forced into using social media. She explained it this way,

[What] I needed to do is to utilize ICT and some of the things that are out there more so than I do, and make them a part of what I do. Because I can see that that's where the kids are at, that they want to be using those tools.

While Ann felt, to some extent, forced to use social media, others agreed with her contention that social media should be used because it is part of the world that today's students live in. Ann did muse about whether this idea was completely accurate, stating that the digital native idea (Prensky, 2011/2001) could lead to problems "because then we make certain assumptions." In the same conversation, Ann stated, "its just kind of what I'm told. But, do we know enough? Is there enough solid research and study after study that shows that their brains are in fact different?" Even though sometimes questioning the concept, the participants generally conceded that social media was an important part of the students' world. Ann also added that using social media should "not be just because [students] are 21st century learners." Similarly, Frank's motivation for using social media was also to meet students on their terms, "I mean, that's the evolution we're at. I mean, the kids are digital natives. That's what the kids have access to, that's what the kids know now, so it makes no sense to do things the old way." Sally reinforced this thinking, stating, "It is where the kids are, and what they are doing, so they will look at it then." Joseph, like all the participants, had a number of reasons for using social media. However, he also stated that "it's part of the life of our students in our school" and if social media was not used, then "we are missing a whole part of education that we can be tapping into, because you are then relating to kids in their own lingo."

Digital citizenship. James agreed with others about social media being part of students' world. However, he added an important idea that other participants articulated

as well. Speaking passionately about online safety, understanding social media, and mobile devices, he exclaimed,

They are tethered to them. They are, it is on them, and it is with them. They sleep with them . . . Listen, they're connected, these kids are connected. They are wired different, they are, and we have to accept it, so why not teach them more about it.

Joseph also thought this reason, the opportunity to teach ethical and appropriate use, was a very important one,

It's something that's been kind of under the table, you know, like we've been "you can't access your Facebook account in school." So then, if you bring it out in the open, then you can have those discussions with kids in terms of what is appropriate, what is inappropriate.

The theme of digital citizenship, including ethical and appropriate use of social media, was an important thread amongst almost all the participants. It is also a key part of Manitoba Education's *Literacy with ICT* continuum (2006), and the focus of recent books such as *Net Smart* (Rheingold, 2012) and *Hamlet's Blackberry* (Powers, 2010).

Communication. Another common, and very pragmatic, reason for using social media was for communication. For example, Frank used Twitter for communication with students, using it for sending out reminders. He started using Twitter since, when he asked his students, he found that over half of them had accounts, so he thought it would be a good way to communicate reminders and other information. James also used Twitter for communication, adding that it is an almost "instantaneous" way of finding information and communicating. Mary's use of social media was also for communication, yet she chose to use Facebook pages. She explained,

It's a really good way to share ideas and to communicate with them, and if they have questions they can very easily get ahold of me. And they are much more at ease to send me a note on Facebook than they are to phone me, or something like that.

While meant primarily for students, parents were also able to join the pages. Many did, especially parents of her grade 10 students. Sally shared these Facebook pages with Mary, but Mary was the one who kept them up to date. Following similar reasoning, Nancy turned to social media out of a sense of “desperation” in finding a means to communicate with her students,

Trying to find a way to communicate with students that you don't have in the classroom. I don't want to have to chase kids. I want to be able to sit down and, you know, “this is due” or “come and see me” or “do this.” So, it's communicating with kids when you don't have face-to-face time with them on a regular basis.

Increased and easy communication with students and parents was a major reason why these teachers decided to make use of various types of social media.

Increased audience. Related to communication was the opportunity to open students' work to a wider audience. This reason motivated several participants, as well. Ann wanted to use social media to connect to a broader audience. In particular, she encouraged students to make use of social media in order to raise awareness about social justice projects they were addressing, “Just to try to get their message out in a different way, rather than face-to-face, rather than presentations.” Ann also saw that the idea of a broader audience had a two-sided nature, stating, “To me that's the drawback. But that's

teachable too. Don't ever put anything out there that you don't want the whole world to see." In this way, she combined the reach of social media as a way to teach about its use.

Like Ann, Joseph also pointed out the value of a larger audience for student work by explaining,

I think the biggest thing is that . . . when you're using social media, or if you're using any type of – what's the word I am looking for? Internet based, I guess, way of highlighting student work. That whole idea of having it out there so other people can see. I think that's the biggest part of that, the social media part of it. Because we can take pictures and put it into an iPhoto library or have them [students] take pictures and print them and put them into a portfolio, and the portfolio gets lost. But that Facebook page, I will leave it there, you know, as long as Facebook is still around. Ten years from now, twenty years from now, they will be able to go onto the Facebook page and see their pictures, and the same with parents. So, I think that's the biggest thing with social media.

Joseph also talked about the motivation factor of social media, enhanced by a bigger audience. John, who used blogs in his classroom, also saw the broader reach as motivation and told stories about comments by other students and parents on, and about, the blogs. The motivation to "take pride in their work that other people see" (John) has been supported in studies conducted by Allen (2008), Fahser-Hero (2010), and Moayeri (2010). Broadening audience was seen as a way to increase engagement and add authenticity to student learning.

Collaboration. Using social media for collaboration was also a reason for its use, this was described in particular by Anthony, James, and later by Sally. All made use of

Google docs for this purpose. In the past, Anthony connected with a teacher in another school, and their students collaborated successfully on an assignment using social media. This year the project did not materialize, but he planned to pursue it again the year after this study. James used collaborative activities to help model and teach about digital citizenship, including the ethical and appropriate use of social media. Sally made use of Google docs so that her students could easily collaborate on lab reports, even outside of school hours. Collaboration, however, did not always come easily, as will be discussed later in this chapter, and again in chapter five.

Other reasons. A number of other reasons were given for using social media. For example, Anthony and Sally talked about being “paperless . . . that’s my sustainable development” (Anthony). Joseph stated that his major goal for social media during the year of the study was to use a Facebook page for his industrial arts students to post their progress and reflections on various projects. In the past, Joseph had used blogs and wikis for a similar purpose, but this time was turning to Facebook because of its popularity with students and parents. His reason was that it was a more public place for reflective thought, alluding to the greater audience afforded by this medium. John also used social media, blogs in particular, to have “kids convey their thoughts” and to also to “prod” boys to write. Nancy, who made use of the education-focused social media site, Edmodo, found that she made use of various features of the platform. These included quizzes to aid in assessment, a calendar, tagging, and badges for motivation. Anthony had a variety of uses for social media, as well, including allowing access to Facebook for information, such as photos for projects, Google docs for various assignments, and Prezi for presentations. A few of the participants, notably John, James, and Mary, also used social

media, in particular using Twitter and Facebook, as a source of resources, ideas, and links that they used in their teaching. It can be argued that some of these purposes may not make use of the social aspect of the medium, yet they are sites labeled as such.

Summary of reasons for using social media. In summary, while the reasons for using social media are often unique to each participant, many common threads existed among participants. The most common, shared in one form or another by eight of the participants, is that social media is part of today's students' world and that teachers should meet them "where the kids are at" (Ann). The notion of making use of technologies used by youth is a common idea, and is employed often by authors such as Prensky (2011/2001) and Brown (2008) as a method to exhort educators to use educational technology. Closely related to this reason was using social media as a means of engagement or motivation. John explained, "The kids can work at their own speed and that's what I like. And they just seem to be more interested. It's just hands-on and they seem to respond." Another very common reason for using social media was for communication purposes, an almost instantaneous way to share resources, reminders, and other information with both students and parents.

About half of the participants mentioned a variety of other reasons, such as going paperless, reaching a broader audience, and teaching/modelling digital citizenship, including ethical and appropriate use and online safety. As interviews went on, the latter theme of digital citizenship, in its many forms, was voiced by all the participants. All saw it as a concern, yet most also saw it as an opportunity. Finally, John talked about student empowerment, "You give some of the power to the students and the more they feel like they have control, the more they'll do with it." This sense of empowerment and control

was also a benefit described by others once they began using social media. The benefits elucidated from their actual use of social media are described in the next section.

Benefits Realized by Using Social Media

We have seen a number of reasons for the participants' decisions to make use of social media in their teaching practice. Now we will look at what they actually found to be the benefits of their use of social media. Examining the themes in Table 4 (p. 125) shows that the benefits arising from social media were discussed often throughout the interview process. Some of the reasons that the participants had for using social media, as described earlier, often materialized in practice. However, benefits they had not considered were also realized.

Communication benefits. One of the major reasons given by participants for using social media was communication. This goal, and related ones, arose often in interviews as the year progressed. Referring back to Table 3 (p. 124), we see that this approach arose more often than any other. One idea that was expressed by several participants was that access to the teacher, as well as relevant information, was available almost anytime. This was seen as a significant benefit to both teachers and students. Frank stated, "The biggest benefit is that I don't have to be right there for them to get the information they need," adding that this leads to less frustration for students. In his view as a math teacher, students can get help as they need it and "it has saved me time" because it is "such an easy, quick fix. I like it." He also stated that there are limits and that students are told that his response may not be immediate. Sally agreed with this assessment, explaining that students have access to resources at home. Just as Frank experienced, Sally also found this way of helping students when they were stuck on

homework, beneficial, stating, “I have had a few of them do that, so that’s good. I’m available 24/7, but that is all right.”

Mary pointed out that “it’s just one more way to open the door for kids or parents to talk and they can verify what is due, what I am expecting.” During a storm day, students were able to ask her questions relating to upcoming assignments and to communicate schedule changes. Mary told of a time when she forgot to send a permission slip home for a field trip, and she turned to her Facebook page as one means for parents to give permission. As described earlier, Nancy’s primary reason for using social media (Edmodo) was to communicate with students out on work placements. She found this method very efficient for her purposes, stating, “The benefit is not for the kids in this case. In the end it would be because I am not chasing them around getting mad at them.”

The initial purpose of using social media for communication was a realized benefit for both students and teachers, with all participants commenting on some aspect of this. John summarized what he believed to be the result of the increased communication,

I think before there was this tension. There was this “us versus them” mentality where the kids were trying to hide and pull one over on the teacher, and you don’t see that anymore. You see the kids being comfy in texting or communicating on a different level with teachers now . . . where you get an email or a text, “I’m stuck on this problem. How do I do it?” To me, that is a good thing and that happens more and more . . . I just think it helps. It helps the teachers, it helps the kids, it

helps them communicate, I guess. That's the big thing – there is a lot more communication going on.

Mary also noted this change,

I think it also gives them a forum to sometimes interact with people, like other teachers that they would be more hesitant to approach. Before, they would have been more hesitant to approach, but now because there is that form of communication, the kids can take the next step and talk back. So I think it helps them that way.

Motivation and engagement. Increased motivation and engagement was an often-cited result of using social media. John found that it is “interesting to the kids . . . it helps keep their attention and it's a change of pace from listening to the teacher, or reading a book, or jotting notes down. I think it's just another tool to get the message across.” While he observed that students wanted to do the work (blogging in this case), John also cautioned that it must be used in moderation in order to keep the interest level high. Similarly, Mary found that links and videos she often put on Facebook stimulated discussion in class. She also posted bonus questions on her mathematics page with success. Nancy found her use of Edmodo to be motivating, describing how the students “loved it” and that “they're doing work and they're having fun with it,” noting how this then acted to motivate her. Sally added that the novelty feature and being “able to do something in a different way” served to increase engagement. All participants observed this effect, to some degree.

This increase in engagement could be related to John's earlier comment about giving more control to students. Several participants in subsequent interview sessions

noted this sense of empowerment. Frank suggested that allowing students to use social media and mobiles “empowers them a bit” and, in return, they show more responsibility. Anthony stated, “The more we give that freedom, and the more they use these Web 2.0 tools and stuff, the better off they are,” adding, “Let the kids roll with it. Give them some control . . . kids like that.”

Collaborative activities. One of the major benefits of using social media cited in the literature is for collaborative activities (Agarwal, 2011; Miller, 2009; Pifarre & Staarman, 2011). Miller (2009), in his case study of high school students using social networking (N= 11), noted an impact on learning through the use of collaborative tools in the social network. Interestingly, initial reasons for using social media in this study did not often include collaborative potential. As interviews progressed several participants noted the effect of social media use on collaborative activities. Sally, for instance, began having students use Google docs for lab write-ups, using an iPad for each group. This way, students could fill in data as they performed the experiment and they could collaborate in the write-up, even when at home. While Sally noted that although some students are doing this, overall “they are not very good at collaborating yet.” However, the access anywhere, anytime is something that she saw as a positive. Tony used Google docs in a similar way, having students collaborate on a digital citizenship project and, in the past, on a collaborative project with a class in another school. Tony noted an increase in collaborative work, even if it was simply sharing ideas for projects. James used Google docs to introduce the idea of working collaboratively to his students, relating how students come to realize that they could “collaborate with someone across the world.” Joe also spoke of successful collaborative projects, not with his current Facebook page, but

with the use of wikis and a grant-winning YouTube video produced collaboratively in previous years. In that project, students worked together to create a video, shared on YouTube, that won a grant for a local group. John noted collaboration, not necessarily on blog posts, but with students helping other students to do associated blogging tasks, such as adding an image to a post. In the past, they would have gone to John for assistance. While collaboration was not a major benefit seen by all participants, it was important for several, and figured in future plans for using social media for others.

Teacher benefits. The participants delineated other benefits of using social media, some of which were personal benefits for the teachers themselves. Some of these benefits have been described earlier; however, participants also shared other examples. James explained how he could follow students' progress on assignments as they shared their documents with him. In a similar way, Sally mentioned how she provided detailed feedback on one document created by the group. The entire group could then see the comments, saving her time that would have been spent giving individual student feedback. Frank told of a student with whom he communicated using Twitter while the student was on a family trip. Mary even used a Facebook page to keep in touch with former students, sharing scientific information and links that they might be interested in. In this way, she kept connected without needing to have them as "friends" on her regular Facebook account.

Summary of benefits. The benefits of using social media, as perceived by the participants, were many and included unique opportunities for learning. Joseph told about how social media, in this case Skype, enabled the entire school to connect with a Canadian astronaut in a previous school year, affording an exciting opportunity that

“went over really well.” In summary, the many positive results from their use of social media prompted all of the participants to commit to continue using social media, and several were planning to incorporate more ideas in their practice. This, of course, did not mean there were not any concerns, challenges, and hurdles to overcome. Frank summed up his feelings about using social media by saying “If you enjoy doing it, it doesn’t seem like work.” Figure 7 (p. 141) is a concept map that pulls together the many reasons participants had for using social media as well as the many benefits that they reported. These are presented together since overlap between reasons and benefits occurred.

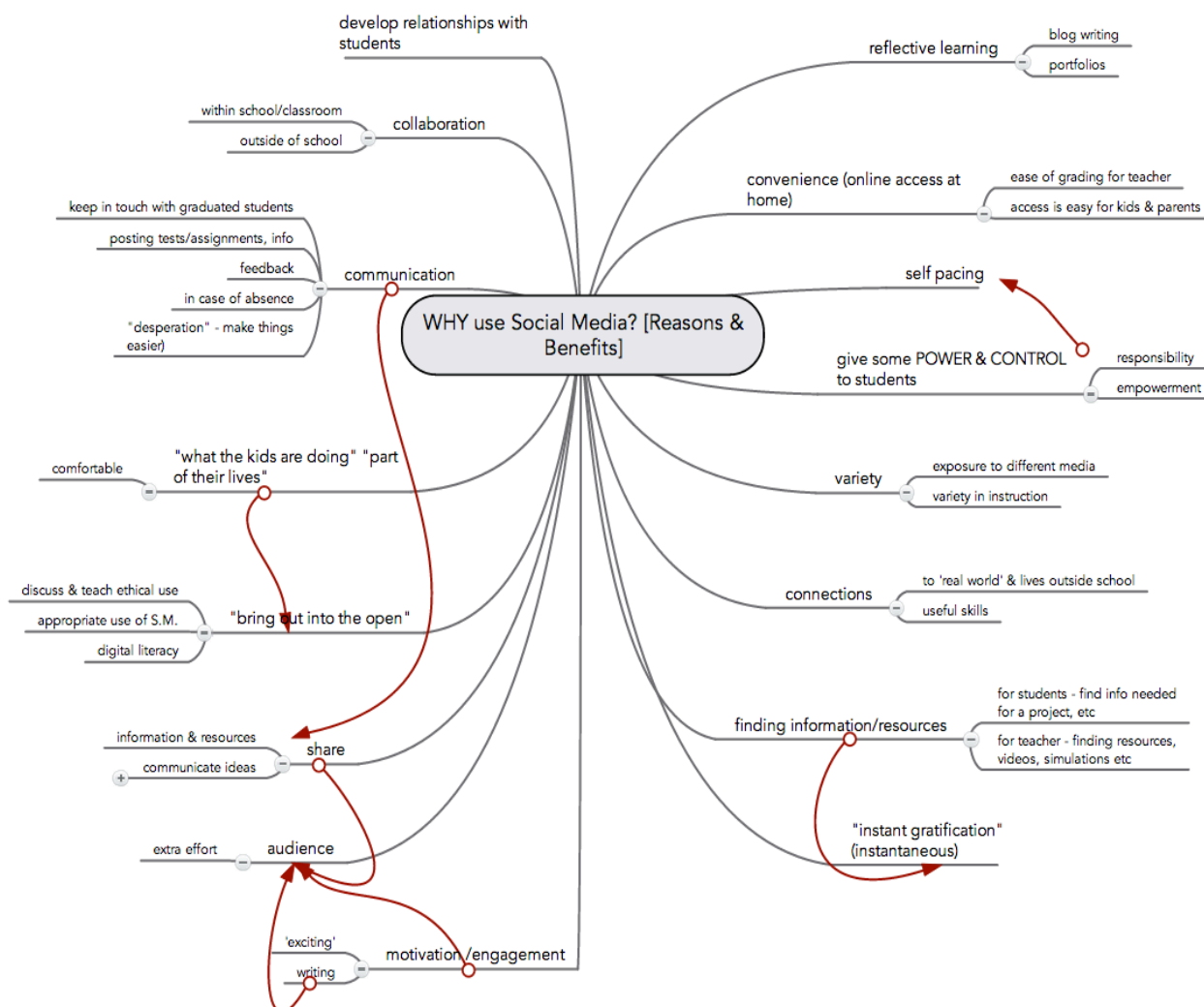


Figure 7. Summary of reasons for and benefits from using social media.

Supports Identified for the Successful Use of Social Media

As the participants talked about their implementation of social media, a number of areas of support were identified. The areas of support can be summarized by several sub-themes: technology, people, professional learning, and time. What the participants had to say about each of these is discussed in turn.

Technology. Social media, as we have seen, is more than technology alone. It is about interactions and sharing, yet it is based on technology. Having good access to both computers and the Internet is, not surprisingly, important for the successful use of social media. Anthony pointed out that “some of the hardware and so on, that allow us to do these things, needs to be in the classroom so we can do it.” Technology is a necessary support, yet can be a hurdle or challenge as well, and the fact that it is seen as such by many participants indicates its significance. John expressed this thought, “The complaint is, if it doesn’t work, you kind of forget about it, and I would say that’s my biggest beef with the technology.” One possible solution to the access problem that was under consideration by the school and division was allowing students to bring their own devices to school. The school division’s technology plan called for implementing such a strategy. Participants were exploring this concept, and Joseph noted that it could be a way to increase access and save money for the school. He stated, “The cost of replacing equipment is really high, so if we can start moving toward that bring-your-own-device kind of thing, where students are starting to bring their own equipment into the school,” then that cost could be reduced.

People support. The next area of support raised can be described succinctly as “people support.” Participants commented on the support of various stakeholders, from

students to trustees. Sally expressed the value of student support as she attempted to implement iPads and Google docs for lab reports, “If the grade nine’s had not been as patient as they were with it, and as helpful as they were, I may have scrapped it.”

Anthony agreed with the importance of students “buying in.” He stated, “you have to have students that are willing to embrace this type of change.” Parents and community were also identified as an important source of support and, for the most part, were at Prairie School. Joseph communicated, “Our community is very supportive in terms of when the school tries different things and does different things. We don’t have parents in our community who come down on the school. They are very supportive of the school.”

When asked how the use of social media was accepted at the trustee level, Joseph recounted a recent school board meeting at which he presented his use of Facebook in his industrial arts classes. He recounted that “they seemed to be impressed” and not one asked questions about putting photos on Facebook. Indeed, the school division’s technology committee, which included trustee representation, was promoting such technologies.

Another source of support, often mentioned by participants, was school administration. The school principal stated that he was very supportive of the use of social media. This was also the perspective of participants. Anthony summed up the value of this support at Prairie School,

The administration that we have absolutely embraces technology and that helps 100 percent . . . So number one, the administration and the division have been very good. We have good tech people in this school that help push that envelope a little bit, so we’re pretty lucky. I think we’re luckier than most.

John agreed, pointing out the importance of the principal “giving a push or an interest and continually expose[ing] you to stuff . . . It makes a difference.” Frank made the observation that no one in the school had ever been discouraged from trying new things. James reinforced Frank’s contention. He recounted that when he told friends who work at other schools what he was doing in Prairie School, they exclaimed surprise that he was allowed to try these things. In another example, Sally was supported by the principal in implementing the use of Google docs for collaborative lab reports with the purchase of several iPads for her classroom. This supportive atmosphere appeared to be an important component in Prairie School.

Another human support seen as positive within the school was helpful colleagues and, in particular, an in-school support person who could help teachers implement new ideas. In Prairie School, two teachers were given time to act as support for others, and almost all the participants talked about the importance of this type of support. Frank pointed out how these colleagues made others aware of learning opportunities, new ideas, and were available to help out when needed. Anthony made the comment (quoted in the previous paragraph) that the school was fortunate to have several good technology people to offer support to others. Nancy, who was the only person using Edmodo in the school, made use of these colleagues, as well. Although she relied more on Edmodo technical support, she wished that someone in the school could help her more. Nancy’s comments reinforced the value of this more immediate, and convenient, type of support. Still, even with this available support, a few participants relied more on their own abilities to explore and learn about new technologies. Mary explained, “It’s all figuring it out for myself and going through it all. It seems to work.”

Professional development. The next area of support identified is professional development (PD). John said, “I think that time that you are given for in-services is huge, really.” All but two participants thought professional development was vital – even if not always in the traditional mode. Some saw traditional PD as a way to be exposed to new ideas, but thought it needed to be more hands on, personalized, with time to explore and play with the technology. Sally put this into perspective by stating, “Sometimes I find at workshops they just kind of skim over everything. It’s a quick overview and you don’t actually get to do what you need to do.” Nancy combined in-services followed by her own exploration, “I would rather see it done by somebody else and then work through it myself.”

Participants also described other methods of PD. Nancy, for example, also liked to go on visitations to other schools as a way to learn about new ideas in addition to more traditional PD. James talked about the importance of Twitter to his learning. He followed other physical education teachers and organizations that tweeted resources and ideas that he then used. Frank and John also mentioned Twitter as a form of PD. Every participant spoke of the importance of exploring and playing with technology themselves, or with colleagues, that could be viewed as a type of PD. Anthony described this view, “I learn by getting my hands on it. Play on my own to learn about it, how I can use it.” A consistent theme in all of this was the time factor, as pointed out by Frank, “Just whether it’s me playing for two hours on Twitter and figuring it out or somebody showing you. But that, to me, would be the biggest thing, getting time for PD.”

Time. Time, not surprisingly from the preceding discussion, was an important sub-theme in the study – and has implications for supporting teachers wanting to

implement social media. Indeed, time is a hurdle and a support; that is, time is needed for learning, exploring, planning, and implementing. More on this topic is examined in the next section of this chapter, since it is more often seen as a hurdle or challenge to implementing social media. Figure 8 (p. 146) is a concept map that summarizes the supports participants identified as important in their implementing social media for teaching.

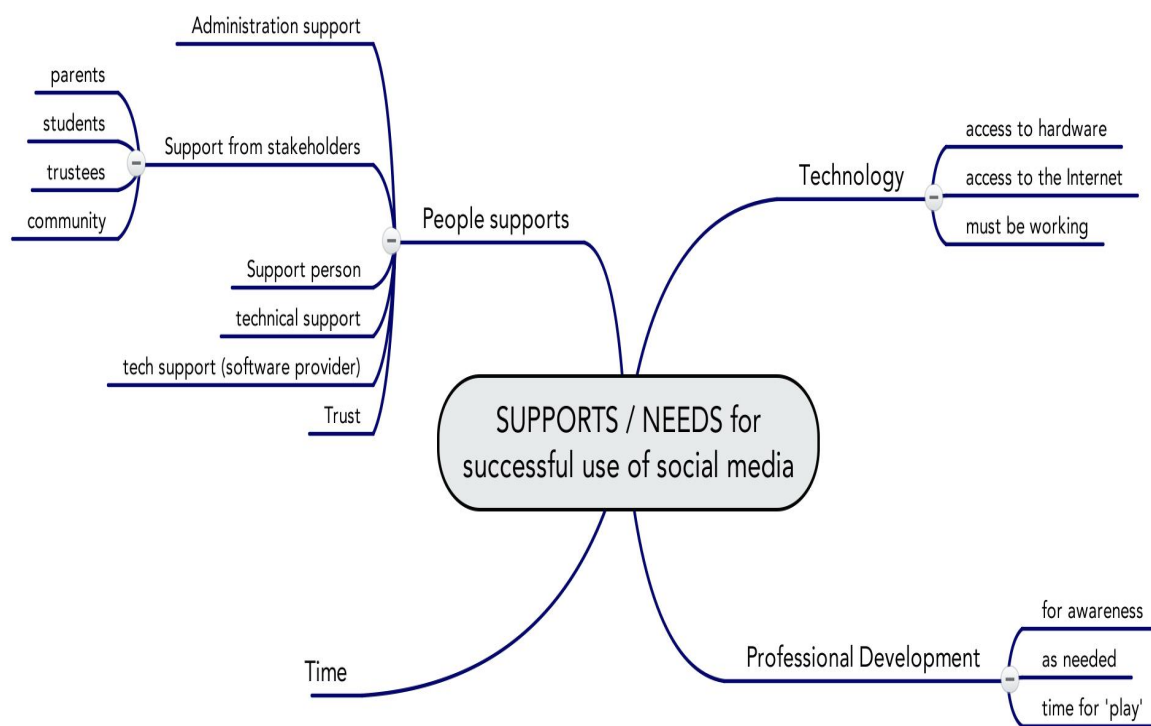


Figure 8. Supports for successful use of social media as identified by participants.

Concerns, Barriers, and Challenges

Although the participants in this study saw many positive aspects of their use of social media, they identified several challenges that needed to be addressed. Many of these concerns and challenges arose as a result of the double-edged nature of technology (Fullan, 2013; Postman, 1995). Mary described this dichotomy, “No matter what tools we

use in the classroom, there are always going to be pluses and minuses, and there are always going to be boundaries in some regards. So it's just one more thing, one more trade-off."

Many varied concerns. Ann shared several of her own concerns with social media. One, which might be more about students than social media itself, was her observation that students were posting on the blog at late (or early morning) hours and were then tired the next day. Another concern she had was cheating. One of her students cut and pasted a book review from another site to the class blog. This actually surprised her. She speculated that the student "seemed to feel she had to live up to other blog entries," adding that this "is not the fault of social media."

Nancy's concern was related to her area of expertise, business education. She noted a loss of letter writing skills and formatting of documents, including spelling and proofreading. James thought that one drawback to social media was that students were too reliant on it, that it "can't be the only thing" used to find information. Related to this was a concern expressed by both Joseph and James: the effect on personal, face-to-face interaction. Both James and Joseph added that there should be time for both, with Joseph stating, "Any time that you use one thing too much, it's not good, right? . . . That's where, [with] the social media stuff, people can get caught up in it, and it becomes consuming." James suggested that students could use social media and then bring ideas and information back to class for discussion. Some other minor concerns that arose included a certain amount of loss of teacher control, and students forgetting passwords for accounts.

Distractions. Another concern expressed by Sally and Anthony, and which is cited often in the popular press and in the literature, is the distracting nature of social media and technology (Sana, Weston, & Cepeda, 2013; Powers, 2010; Rheingold, 2012; Rosen, Carrier, & Cheever, 2012). Neither teacher found this a major concern; however, they commented that distractions do happen as a result of the technology. Sally observed that students using certain technologies are “sometimes . . . a little too comfortable. They are texting a little bit too [much].” Anthony pointed out, “When they [students] are on Facebook they may do a little bit of responding, and to me that’s not a bad thing, but it may not be related to class. I don’t see a lot of it.” John also pointed out, “It’s not the big deal that we thought it was going to be, in terms of distractions and things like that.” It is interesting that, although this concern was certainly acknowledged by participants, it was not seen as a major issue for them at this point. Perhaps the biggest concern, related to this distractedness, is the entire issue of ethical and appropriate use of social media, including concerns about safety and bullying.

Attitudes and values. A major barrier for some participants can be summed up as attitudes, or values. In some cases, an attitude of indifference or discomfort can act a barrier to utilizing social media tools. For example, Ann found that the public nature of social media, an attribute that many found advantageous, was a barrier for her, stating, “Well it’s very visible . . . and then that can always pose problems.”

Others expressed this concern as well, but for them it was something to be aware of rather than a barrier. Ann found her attitudes about privacy made her skeptical and uncomfortable about social media. She talked quite a bit about her conundrum, “You use it for the kids, but it’s not something I’m drawn too. I love some of the stuff that happens

because of it, but in terms of me learning it, you know, I'm just not that interested." In the past, she had been proud of her progress and "staying ahead of the game," but at the time of the study she felt "behind on this one." She talked more about her struggle,

I don't like that feeling, but it's a tough sell. Anything that has come along has always been an easy sell with me . . . I have always been looking forward to trying something new and doing something and this is . . . ah, the whole social media thing. Part of it is because I am so private. I think [to] myself, "Why would you want everything out there?" You know, I don't get that.

Similarly, Nancy, who taught courses that used technology, was very excited about her use of Edmodo but had an indifferent attitude to emerging technologies such as social media. She stated,

I really don't think that some of the things, like even this "cloud" and stuff like that, I don't have personally. I don't want to do it, and so, if it's not going to help my kids, then why bother?

Some of the discomfort with social media, according to Joseph, arose from a fear of it, which was based on some of the issues around privacy and online safety. Joseph explained his thinking, "There is stuff in the media and the news about the bad things that happen with social media and technology. Then the schools are reluctant to try things."

Multiple spaces. A challenge discussed by several participants was related to the problem of "multiple spaces." This refers to the situation wherein a person uses so many social media sites that some of those spaces get ignored or neglected (Gray & Smyth, 2011). One parent told Frank, who used Twitter, that he/she was already on Facebook and did not want to join another social network. Joseph talked in depth about the same

issue, explaining that this was why he chose to use Facebook, “The nice thing about Facebook is [that] everybody has an account already.” Ironically, he also described how this was a problem for him personally. He was not a regular Facebook user, so he needed his own reminders to remind students to post their work to the course page. He made the observation that using social media needs to be made part of the routine and become a habit, “Well, again, I’m getting there. It just has to become that routine, right? That’s the part where I’m not at that point yet. I have to get into it. It’s got to be part of my routine.” He made the comparison to his work helping primary teachers use blogs in their classrooms. Joseph met regularly with them, and this acted as a reminder until the process became routine. Joseph’s situation illustrates how reminders can help mitigate the problem of too many spaces.

Other participants also discussed the issue of multiple spaces and of implementing spaces not normally used. Mary, for example, liked to explore the various social spaces that students were using, but found “a lot of them, it’s hard to remember to go back to.” Nancy described her conversations and thinking with Joseph about this very problem for students and staff, stating,

But there are so many things in our school and I guess that’s the main point that Joseph was saying. We maybe need to have just one – what did he tell me?

“We’ve got a lot of different things going on in our school, so maybe that is not so good.” Maybe what we need to do is rein it in . . . somebody is using Google Docs, and somebody is using Edmodo, and somebody is using whatever other ones there are out there. So maybe we need to sort of, centralize it for our school, I don’t know.

This issue certainly appears to be an important one that some teachers were grappling with, and will probably remain an issue for them to sort out eventually.

Time and other priorities. Perhaps the biggest challenge mentioned by participants was related to one factor, time. Having time available was also mentioned in terms of support for implementation, and, even though participants were appreciative of time and opportunities allowed for PD and personal exploration, it remains one of the biggest barriers. Related to the time problem are many challenges: other competing priorities, the learning curve for teachers, becoming aware of what is available and how to use it effectively in the classroom, troubleshooting issues that arose, and having time for hands-on learning about the technology. All of these challenges were brought up by participants, and served to complicate their desire to make effective use of social media, or any innovation, for that matter.

Prairie School was engaged in a focus on assessment practices and implementing the new provincial report card, and thus, time and energy were being directed to these endeavours. Other priorities that consume time included extracurricular and other duties. Frank, who was heavily involved in coaching, stated, “There is always something coming up and then extracurricular stuff gets in the way . . . That takes time. Until March, I’m kind of floating . . . water wings.” Sally had a similar comment when talking about her wiki, “I haven’t forgotten about it, but I have been so busy with some of the other stuff I haven’t got some of it [information] on there.” Ann, whose struggles with her personal use of social media were described earlier, also had the challenge of teaching courses and grade levels that she had not taught for several years, in addition to commitments at home. She explained, “Yeah, really focusing on the basics, and figuring out where they

are at, and so . . . yeah, that's [social media] not going to be a priority." Other priorities certainly had an effect on what the teachers wanted to accomplish and led to decisions about using the available time.

The words of the participants are perhaps the best way to get a sense of the importance of the challenge of insufficient time. Several comments and statements they made are listed here:

- Just trying to keep my head above water around here! (Ann)
- I have been around long enough to know not to take on anything else. (Ann)
- I don't know if it's a drawback or a negative, but it's the time constraint. The time needed to do it properly. I would love to get into blogging and learn more about blogging. I just haven't got time right now to do it, and that's by far the biggest issue for a teacher. So, to me, the biggest thing is the time needed to figure out how it works, how to use it properly. There's PD involved, whether it is individual PD – "I've got to figure this thing out" – or going to PD. And that to me is the biggest, and I don't even know if it's a drawback or a negative, it's just the problem. That's what it is. The biggest problem is time. (Frank)
- It has taken me a while to get caught on to it and learn how to use Facebook and how to upload pictures. (Joseph)
- But they have made some changes and maybe it will be better. Maybe I will be able to find things a little bit easier, but I haven't had time to look at that. (Nancy)
- Not enough time, usually. That's the only thing. The time to learn all of this and keep up with all your school stuff and your marking. Like, your regular stuff, it's hard. (Sally)

- Now that I have learnt a lot of those things, it will be much faster. So that way, once you know it, it's fine. But it does take a lot of time, and I can see some people getting so discouraged with it that they would quit. (Sally)

Many more quotes about the time challenge could be included. It is plain to see that this is a major hurdle to deal with for these teachers.

Technology as a challenge. The final challenge to implementing the use of social media, brought up by the participants, can be included under the topic of “technology.” If technology is not accessible, or does not work or if Internet connectivity is not robust, it is difficult to make use of social media. John highlighted how this can sometimes be a barrier,

My biggest thing is whether or not the hardware works, and that's where I get frustrated. You can have a great lesson, you know, where you are going to be using social media, but there are all sorts of factors out of my control that determine whether or not I use it. And I think last year we had some trouble with laptops and availability and whether or not they work. I know this is a big concern. The complaint is, if it doesn't work, you kind of forget about it, and I would say that's my biggest beef with the technology.

Mary reinforced the idea that “technology is not always dependable,” and when it is not, “it's a pain in the butt.” Sally commented on an issue with using Google docs and iPads, “It just seems like they will freeze up, or the typing on it is hard to do, or it changes the table that they have done . . . so that's a bit frustrating for the students.” Sally suggested that students create their tables ahead of time and then they just had to fill them in. This worked, yet it did require time for her to find this solution. Nancy

also experienced technology-related problems in her use of Edmodo, but they were related to the platform itself and changes that were made to it. This meant that she had to take more time to learn about the changes. She also made note of limitations of the platform: some things she wanted to do she could not, and she had to find ways to work around them. Overall, the participants were pleased with the technology available in Prairie School. However, these issues did crop up and were a source of frustration for many of them. As described earlier, the school was experimenting with students bringing and using their own devices, and this has been reported, by those involved, as working well so far.

The many concerns, challenges, and barriers discussed by participants are summarized in the concept map in Figure 9 (p. 155). This map includes the major ideas in this section as well as some of the comments made by individual participants. The topic of ethical and appropriate use arose as both a concern and an opportunity. Since every participant mentioned this topic, it was considered as a separate theme and will be discussed in more detail in the next section.

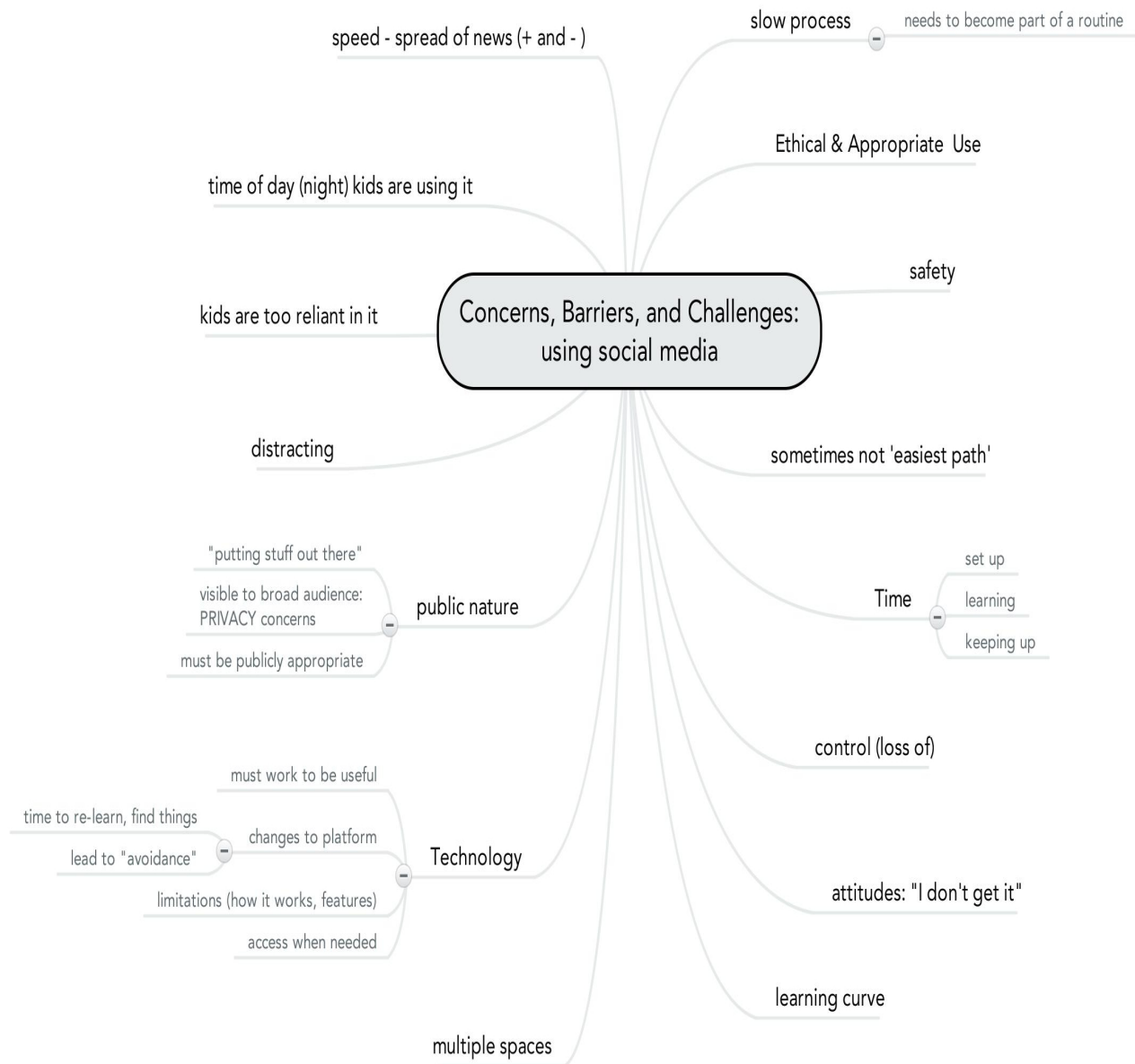


Figure 9. Concerns, barriers, and challenges in using social media.

Ethical and Appropriate Use of Social Media

The theme related to the ethical and appropriate use of social media arose, in one form or another, in conversations with every participant. The discussions related to social media use by both students and teachers. Several participants talked about the serious consequences that misuse of social media can have for teachers. Participants were very

much aware that they had to exercise caution with their own use of social media. Mary made this comment,

As a teacher, I think you need to be responsible for what's going to appear on any kind of social media, of yourself anyway, so that reflects back to the "teacher 24/7" idea. So it's tied to real life there too, making sure security settings are appropriate.

Frank had a similar view, "I mean, it can be used for good and it can be used for evil. So, I don't mean I'm not going to shy away from it. I am just going to be careful about how I use it, that's all." John also highlighted this caution, stating, "I worry about that all the time, the responsibility part. Because you can [be] just having fun with friends and then 'Maybe I shouldn't have said that,' but it's too late." This note of caution was apparent to the participants and was in the forefront of their use of social media. This was also a concern for even more experienced technology users. Anthony stated, "At this point, it's more learning the social media aspect of it . . . It's just a matter of me trying to do a little work too. Being my first time, I'm a little cautious."

This awareness was also applied to student use. Issues of privacy, online safety, and bullying were important to these teachers. Every one of them talked, at some point, about these issues. Ethical and appropriate use of social media was very important to them. For most participants, these issues were seen not only as a danger to mitigate, but also as an opportunity to teach. The concept of digital citizenship and teachable moments arose in many conversations. Ann, although hesitant about using social media, stated, "Well, I guess if you use it, it gives you opportunities to teach kids about the ethics of it,

because if you're not using it, then there are not that many opportunities to really discuss ethics."

James was perhaps the most adamant about teaching appropriate use, as this topic came up in almost every interview session we had. He gave examples of lessons and activities in which he talked about this with students and parents. He talked passionately about this need to teach and model appropriate use,

You have to educate them on how to use it properly. We were talking at the staff meeting last week about social media, whether it's Facebook or something else. You teach your kids how to act at the supper table, so why don't you teach them how to use Facebook? Everyone says, "I don't like my kids having texting or Facebook because they don't need it." Well, they're using it, so you have to teach them how to use it properly. When to use it in your down time, can you use it for good? Can you use it for bad? Yes. Do you burp at the table? Do you fart at the table? Do you swear at the table? Those types of things, it's the same thing. To me, it is. So you have to teach your kids how to use it.

Joseph was also forceful in discussing the importance of teaching digital citizenship and ethical use. Like James, he spoke much about this topic, saying in part,

That's a big thing that we need to work on in terms of the school, is that part of it, because there is all that ethical use of technology. That piece of it, I think that is being missed, not just in school, but also at home with kids. So then, if you bring it out in the open, then you can have those discussions with kids in terms of what is appropriate, what is inappropriate?

Indeed, Anthony spent time teaching digital citizenship in his grade nine ICT course. John also had much to say on this issue, stating, “The whole ethics thing comes into play: With great power comes great responsibility.” He also tried to model and teach appropriate use in his classes, explaining, “There is definitely a teachable moment there, I would think.” It was very clear that the topic of digital citizenship, the appropriate use of technology, was an important one. Some saw more of the dangers than others. Some found it “scary” in some ways, yet all thought that there was also a teaching opportunity that could serve students. Joseph made the argument that using social media and devices like smartphones in the classroom offers the opportunity to model appropriate use for students.

Another aspect of digital citizenship is Internet or media literacy. Several participants talked about the need and opportunity to teach these skills. Ann observed, “The biggest thing that has just changed over the years is the access to information, and so you’ve got to teach another whole set of what’s credible, what’s not, and how you know, and so on. If you are not using the Internet, you do not have the opportunity to teach these important skills.” Mary told how some of her assignments could be used to teach these skills, “Researching disorders, it gives the kids a chance to get the idea of what’s a reliable web site and what’s not.” Using social media also came into this discussion, since many people obtain information through social media and they need to understand how to evaluate and filter this information.

Figure 7 (p. 159) is a concept map that presents the key ideas discussed by participants surrounding the idea of ethical and appropriate use of social media. The conversations illustrated the underlying knowledge that using social media has both

positive and negative aspects. The number of ideas discussed shows the complexity and importance placed by participants on this issue. There was an overlying suggestion that using social media provides an opportunity to teach about ethical and appropriate use.

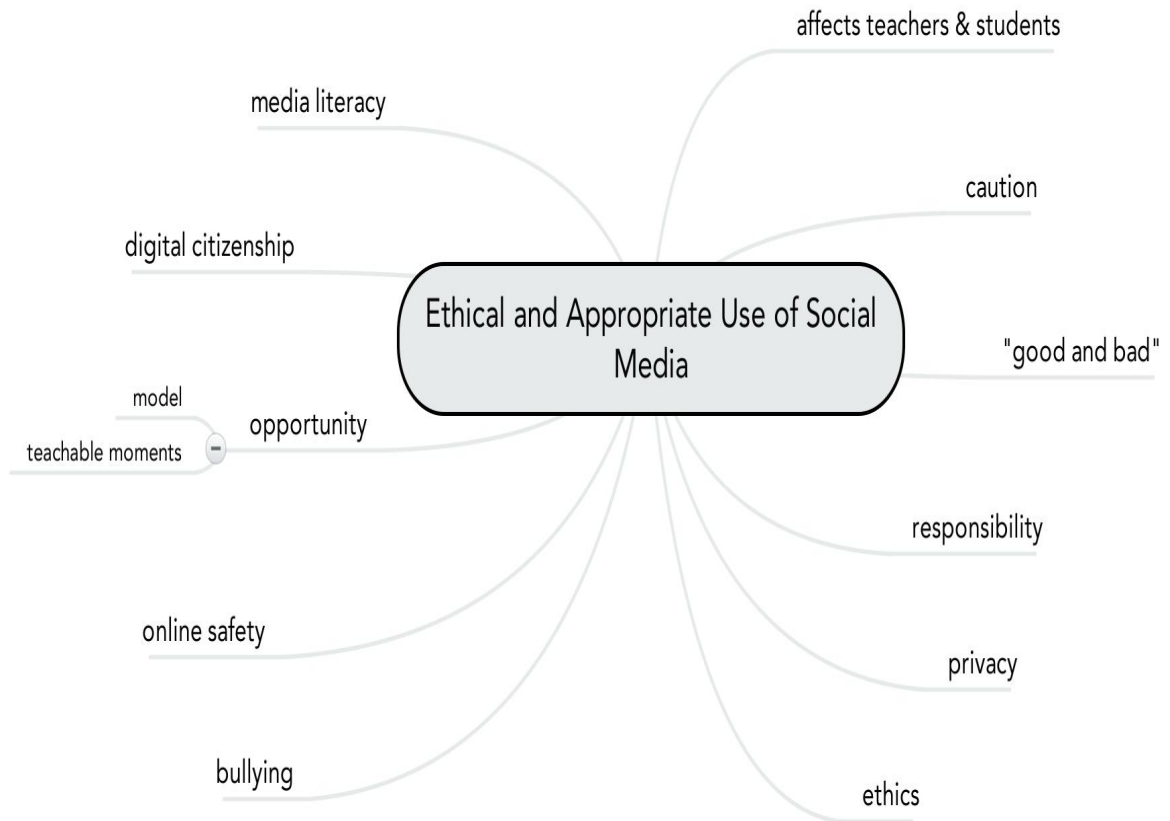


Figure 10. Key ideas discussed by participants about the ethical and appropriate use of social media.

Social Media and Change

One of the research questions in this study asked about change. Does implementing the use of social media lead to change in a teacher's pedagogical practices or beliefs? What is the nature of the change, if any? Participants were prompted to reflect on any changes that they perceived, both in their practice and in their teaching context.

This section of the chapter recounts the reflections of their use of social media in teaching, in light of these questions.

Ann's struggle. Several of the participants did not think that their implementation of social media effected any large changes in their pedagogical beliefs, but instead had led to smaller changes and new ways of doing things. Ann summarized her thoughts this way, "I try to use a student-centred, inquiry based approach as much as possible, so I don't think it's changed anything, just added some tools." As the interviews went on, it became obvious that Ann was struggling with her use of social media. This struggle came partly in the implementation, but also because of her personal discomfort with social media, as described earlier in this chapter. She felt the need to use these emerging tools and saw some of the benefits, but had doubts and concerns. One of the issues that arose in her use of social media was an extended absence from teaching, interrupting attempts at implementation. In the end, Ann decided that she would continue using social media in her pedagogical practice, and even expand what she was doing. Thus, change occurred not only in her understanding of using blogs and other social media, but also in her growing comfort with using these tools, perhaps not personally, but certainly in her classroom.

No change? Nancy's thoughts were similar to Ann's, "No fundamental changes. I mean, we talk about trying to use different strategies and our differentiated learning. But really . . . who I am is who I am." Throughout the interviews, Nancy described both satisfaction and excitement with her use of Edmodo, recounting positive stories each time. However, she also talked about her frustration with changes to the platform and finding time to deal with those changes. Overall, she was satisfied with the way that her

use of Edmodo worked out and the benefits it brought, but she felt that it added only strategies to use and not any deep change to her practice. Joseph was another who did not perceive a big change in his practice, “I don’t know that I have changed. It’s just incorporated something else. So, in that way I don’t think that the social media – no, it didn’t change a lot from what I was already doing.” As described earlier, Joseph had used various forms of social media in the past, so perhaps his use of Facebook was just a continuation of this exploration and use. Joseph did qualify his views somewhat, explaining that he thought that schools need to teach and model appropriate use and to have more collaborative activities in classes. Perhaps Joseph’s biggest insight was his realization that using his Facebook page required a conscious effort for him to make it part of his routine, particularly since he was not a regular user of Facebook. We have seen that three of the nine participants did not feel that social media led to significant changes in their pedagogical beliefs, but served to add more strategies and tools to what they were already using. It is interesting to note that all three of these teachers also characterized themselves as having a hands-on approach to teaching.

John and taking risks. John began his thoughts about change with statements similar to Ann and Joseph, “Well it sure gives me a bigger arsenal on how to get the information across, so I guess that does help you. Has it changed the way I teach? I don’t know.” After some reflection, he later added,

It’s made me take more chances I would think. I know . . . I’m not afraid to use it anymore. I will try things and if they don’t work then so be it, they don’t work. I think it’s enhanced the way I teach.

He talked about how he had become comfortable with what he had been doing and how he would “push it a little more in the fall, and once that works then I will push it. And I also know, if there are times when I don’t use it, that’s okay too.” Throughout the interview process, John talked about the value that he saw for himself and his students as they used social media. He found that he grew to be comfortable with trying new ideas and realizing that some will work and others will not, and this “enhanced the way” that he taught.

Mary’s changes. Some participants talked about effects on their teaching beliefs. In some cases, the changes were small and incremental, taking place gradually. For others, the changes were larger and, in some cases, less gradual. The majority believed that several factors were involved in these changes, not simply the use of social media. For example, Mary talked about slow changes made over time. Mary considered the changes that she had undergone in her teaching, pointing out a number of factors that had influenced her pedagogical practice, including assessment practices and social media. She said this about the role of social media in this process of change,

I think it’s been a whole change of probably a combination of that, but with various other things. Like with the last five years, where I have really gone to a more flexible schedule with the kids. And I think that the social media certainly helps that. It helps them to work at their own pace, in some regards. Or, too, it helps with the flexibility, their own organizing and that kind of thing. So I think it does . . . I don’t know exactly how social media ties directly to that, but it seems like the whole way that I am progressing with everything that I am changing is tied along with the social media. But it is all sort of churning in there together.

This statement illustrates how her thinking had been influenced by several factors, although she did suggest that her use of social media had been a big part of that change. Throughout the interview process, Mary talked about how her use of the media evolved and allowed her to communicate with both students and parents, as well as to provide information as a way to spark interest and class discussion.

Anthony. When asked about any change in his teaching because of social media, Anthony stated, “Oh, I think so. I think very much so.” He explained further, “Yeah, so the teacher directed thing is being lost and, like I say, I think that’s a good thing.” Anthony spoke of changing classroom dynamics to a more collaborative and relaxed classroom, less teacher-directed, and of his becoming more of a facilitator than he was in the past. He attributed some of this change to educational technology, and social media in particular. It should be noted that Anthony recounted most of his experience from past use, and did not use social media in a formal way until the last part of the study.

Frank. Frank also saw a change in his teaching. In particular, he saw the focus on assessment in the school and social media going hand in hand. He was able to communicate at almost any time with students about problems they were having and help them when needed, aiding in formative assessment. Frank stated, “I foresee myself in five years from now being quite a bit of a different teacher than I am now . . . as far as how I approach assessment, and I think social media is going to fit right into that.” He talked about how social media had made his job easier and more efficient, and had helped him to make connections with students. Of interest was the change in his use of social media over the course of the study. At the start, his main use was through Twitter, since many of his students had accounts. As time progressed, however, his use switched from Twitter to

mainly texting, which is more of a one-to-one communication, rather than one-to-many. He still used Twitter to provide instructions and links; however, this use had decreased. He explained, “But where I have been interactive more with the kids is texting in the last month or so.” Frank also began using YouTube as away to record and put up explanations for times when he was away from the school. He found this, in conjunction with texting, to be very effective.

Sally. Sally contended that she was “always just changing, trying to find a different approach in getting it across to them.” When thinking about using social media, and her extensive use of Google docs in particular, Sally said, “I think I have tried to get away from that . . . centre, like around the teacher, the directed teaching, and be able to use some of the media tools for them to use and be able to discover more.” She summed up these thoughts, “It has changed communication a lot, I think. Students are able to become more independent from you.” In this way, Sally was becoming less teacher-centred in her teaching. Sally talked about new ideas she had about using social media throughout our interviews as she began using more and gaining comfort with them. These plans included videoing experiments to put on YouTube, and implementing a class blog. Time was one issue that kept her from implementing all of these ideas during the study. However, she did begin to expand her use of Google documents and found that this use changed the way that activities were done in her class and her assessment of group work.

James. James was one of the biggest boosters of using social media in Prairie School. What did he see as changes in his practice as a result? James spoke extensively about using social media for professional development, and for communication and collaborative work with students. During each interview session, he shared ideas that he

had implemented or was planning to implement. He also spoke consistently about the importance of modelling appropriate use of social media. In terms of his teaching, he stated,

My philosophy would be to use every tool accessible or available to them to improve their learning and, you know, social media is huge. Twitter, Facebook, those things. You are learning from it, so whether it's, not so much negatively, but you know you are learning ethics by using them. So, it's changed dramatically.

He stated how he was now “more aggressive to want to use the social media resource” in his practice. James had made use of social media previously in his practice, yet he continued to learn more and try new ideas. One of the biggest changes that James commented on was his attitude, how it had changed in the recent past. He explained,

We just talked about three years ago. [How] there is no way someone is going to have a cellphone in school, they don't need it. There is no way they need an iPod because it is just for games, and now it's to the point where I hope that most of my class has an iPod, so that it doesn't matter where we are. If they need information, if they need spelling, if they need help, it's in their hand and they can use it.

School change? When turning attention to change in the school as a whole, it was difficult for participants to state the exact effect of embracing social media. They suggested that a number of factors were involved in any perceived change. A focus on assessment practices, a move to allowing students to use their own devices, including smartphones, the already existing culture of innovation, and community support described by participants – all potentially had influence. Participants, however, were

asked to reflect on the changes and the role of social media in those changes. The most common answer surrounded communication, as was discussed earlier in the chapter. Frank commented on the gains this way, “What’s been gained is, believe it or not, you connect more with the kids,” and this increased connection helps to build a “personal bond with the kid.” Anthony spoke of the results of using social media,

You get to see the kids in a little bit different light because they are showing you a lot. The social media involves personal stuff. So you get to see, it goes just slightly beyond the teacher-student, where you get to know them more as people.

Sally did not perceive that there was a “huge change,” because “we [already] do trust them, and they have just started using it.”

Anthony also noted these changes, but added a caution as well,

I think the kids are a lot more informed with the social media, the Facebook, the Twitter, that type of thing. They are all in tune with that and you see it in our school, in the hallways. As soon as they are dismissed, out flip the phones. So I think the kids are more informed, definitely . . . If I look at it in a student’s perspective, they are more relaxed because they are more connected with each of their subjects, that type of thing, with their peers. [However] there is also that darker side of social media within the school environment and there’s still some of it that goes on.

The overall result of this, as described by participants, is a school environment that has been built on responsibility, trust, and relationships, such that the use of social media has generally enhanced this environment. The topic of change, both in participants’ practice and in the school environment, is discussed further in chapter five.

Summary

In this chapter, the findings – the stories told by the participants, their perspectives, their reflections, and observations – were described. An overview of the data collection, context of the study, the school, technology, an overview of the participants, and their initial understanding of the term *social media* were presented in this chapter. Next was an examination of the findings, starting with an overview of the analysis procedure, followed by a look at the codes and themes that arose from the data analysis. A brief overview of the themes was given. The themes included the following: the purposes of using social media, the benefits of using social media, barriers and challenges encountered, required supports, drawbacks and negatives of using social media, ethics and appropriate use of social media, assessment, and change. These themes were summarized in Figure 6 (p. 128). The findings were then described in detail, organized around the themes. A number of reasons for using social media and the resulting benefits seen by participants were detailed. These included communication, engagement, benefits of a broader audience, teachable opportunities, collaborative possibilities, and giving students more control. Next was a description of the supports that the participants thought were important to implementing social media in their practice. These included broad categories of professional learning, people resources and support, technology support, and time. Next, drawbacks, concerns, and barriers to using social media were described. Many of these were related to the seemingly dichotomous nature of technology – as being for good or bad. The concerns included the distracting nature of social media, cheating, and the public nature of the media. Barriers to using social media included time, attitudes and concerns about privacy, and technological

issues. Ethical and appropriate use of social media was a major theme and was described in some detail. Most participants shared cautions, but they also viewed using social media as an opportunity for modelling and teaching. Finally, changes in pedagogical practice and in the school environment were described. Most participants saw small changes in their practices, but conceded that often a variety of factors played a role in the change.

In chapter five, the research questions are addressed more directly, related to the findings and literature. Participants also shared advice for those planning to implement the use of social media in their own practice. The significance and implications of the research and directions for future research are also discussed, along with conclusions, in chapter five.

Chapter 5: Discussion, Implications, and Conclusion

Social media is a popular tool for connecting with others in the twenty-first century. Many teachers, academics, and others have touted the affordances of the educational uses of social media, especially from a social constructivist viewpoint. How can social media be used in education? What does it offer the teacher for teaching? What are some teachers' perspectives of their experience incorporating social media in their practice? How, and why, do some teachers use social media as part of their practice? What factors support or hinder some teachers' use of social media in their practice? What challenges and barriers arise from its use? Does incorporating social media in teaching lead to change in some teacher's pedagogical practices and beliefs? What is the nature of this change?

Questions such as these were explored in this qualitative multiple case study. Nine teachers at a rural school in Manitoba participated. They shared their perspectives over a six-month period as they integrated some aspect of social media in their practice. The results of this multiple case study were presented in chapter four, along with a description of the context. In this chapter, the findings presented in chapter four are discussed in relation to the research questions and the literature, bringing these empirical findings together with the findings of the literature in the field. In addition, participants were asked to share advice for other teachers who were thinking of implementing the use of social media in their practice. This advice is presented in chapter five. While qualitative case studies are not meant to be generalizable, the findings and conclusions can help to shed light on the phenomenon of using social media in teaching. This understanding could help to inform others considering implementation of social media in

their own particular context (Merriam, 2009; Yin, 2009). The discussion in this chapter also examines the contribution of this research to the literature, its significance, suggests implications of the research, including ideas for further research arising from this study, and concluding comments.

Discussion of Findings

In this section of the chapter, the findings and literature are brought together in an attempt to answer the research questions. To review, the purpose of this research was to examine the recent phenomenon of using social media in the classroom for teaching, from the perspective of the teacher. The following research questions were used to guide the study:

1. How, and why, do some teachers use social media as part of their practice?
2. What are some teachers' perspectives of their experience incorporating social media in their practice?
3. What factors support or hinder some teachers' use of social media in their practice?
4. Does incorporating social media into teaching lead to change in some teacher's pedagogical practices and beliefs? What is the nature of this change?

In the following sections of this section of the chapter, each question is addressed in turn.

How and why do some teachers use social media as part of their practice?

The answer to this question is contextual and varies from one participant to another. Similarities existed among the participants, but so too did differences. It was apparent that each teacher had a well thought-out reason for using social media, although in at least one case it was initially predicated on a feeling that it was the “thing to do.” Even in this case, the media were ultimately used to serve a particular purpose. In most

cases, the reasons reflected the affordances of social media seen in the literature, although several uses were focused more on consumption than on production of content. For example, YouTube was often used as a source of videos to illustrate an idea in class instead of for the students, or the teacher, to upload their own videos. The latter use did, however, occur in some cases as well. One participant, Frank, created his own videos for students to access when he was away, and Joseph told of a group of students who created a grant winning video the previous year. The participants used a variety of media, for a variety of reasons, and in a variety of ways. The media used were summarized in Table 2 (p. 113) and Figure 3 (p. 114) in chapter four. They included Facebook, Twitter, blogging, Edmodo, YouTube, Google docs, and others – thus spanning a wide variety of types of social media.

Several of the reasons for using social media were common among the participants. These were using the media for communication, for sharing work with a broader audience, for increasing engagement, and because, as Ann proclaimed, “That’s where the kids are at, or it’s where people tell us the kids are at.” At one point in one of our interview sessions, Anthony made the observation, “These kids use it like they use a knife or a fork. It’s an extension of their hand,” bringing to mind McLuhan’s book *Understanding Media: The Extensions of Man* (1994/1964). In this book, McLuhan made the case that technology is an extension of our senses and of our bodies. Are these new tools extensions of our students? Is this where the kids “are at”? Throughout the interview sessions, the suggestion was often made that social media should be used partly because it is a major part of the world the students live in. If so, then making use of these tools for learning, and for teaching the appropriate and thoughtful use of these

technologies, might be an important thing to do. Indeed, in this study, one of the reasons participants had for using social media was that it provided the opportunity to model and teach appropriate use, in order to think about what the media can enable us to do. This opportunity to consider both the good and the bad that comes with any technology could be an important step in critically thinking about technology. To realize that it is, as Selwyn (2014) suggests, “value-laden” (p. ix) and something that can be both “trusted and distrusted” (p. ix).

Another, related reason, one articulated by some participants is that using technology, including social media, is needed to prepare students so that they “can succeed outside these four walls” (Frank), in the work world or in further education. This type of reasoning is the basis of the work of popular authors such as Prensky (2011/2001, 2009), Tapscott (2009), and others. For example, Prensky (2009) wrote that “most work in the future will be technology-mediated” (p. 64), and Tapscott (2009) contended that the school system “doesn’t deliver for the challenges of the digital economy” (p. 122). These reasons, exemplified by these statements, whether rhetoric or reality, are powerful motivators for educators who see their goal as providing their students with skills for a successful life.

Ottenbreit-Leftwich et al. (2010) studied the values and beliefs that eight award-winning teachers had about educational technology. They found that increased communication and engagement were common reasons that the teachers used technology. They also concluded that teachers “were motivated to use technology in their classrooms due to a strong belief associated with helping students learn and preparing them for their future” (p. 1327). It can be inferred from discussions with the research participants that

this was a motivator for their use of social media. They saw it as a way to improve their practice in a way that would impact student learning and/or engagement. Both Ann and Nancy stated that they would use social media tools only for the purpose of helping their students. One thing was clear, that all teachers had a reason, or multiple reasons, for using social media and, once implemented, they reported other perceived benefits, as well.

The use of social media for activities that can be characterized as connecting or interacting (i.e., communication, collaboration, sharing) is prevalent in the literature (Bower, et al., 2010; Casey & Evans, 2011; Chen & Bryer, 2012; Crook, 2008; Redecker, et al., 2012). As a result of their study, Chen and Bryer (2012) suggested, “Public open social media sites provide students with access to more information and experiences than they would get in a closed environment alone” (p. 99). This seemed to be the basis for the reasons that participants gave for their use of social media. In particular, many utilized various media for communication with students and parents. This communication ranged from sharing updates about the course to sharing resources and learning.

Another affordance of social media, well documented in literature (Casey 2013; Casey & Evans, 2011; Lieberman & Mace, 2010; Wang & Hsua, 2008), is that social media can provide access to a wider audience for student work. Ayers (2011) investigated the role of authentic audience in his doctoral dissertation. He studied 80 high school classroom blogs and detailed the benefits of having an open audience. The benefits included greater engagement and authenticity. However, he also cautioned about challenges that arise, including a shift of power away from the teacher, because “certain features of Web 2.0 are incongruous with many conventional classroom norms” (p. 1).

Recall that Jonassen, Carr, and Yueh (1998) have suggested that successful integration of educational technology requires a constructivist, student-centred approach. This contention has been supported by various studies described in chapter two (Hermans, et al., 2008; Overbay et al.'s (2010); Rakes, et al., 2006). This shift, giving up some control to students, is not easy for all teachers to make, thus it requires careful consideration by teachers.

In this study, reaching a wider audience was part of the strategy for several participants. Joseph talked about how, in the past, he started with restricted blogs and wikis. Once he opened them up, he realized the benefits of wider audience. His use of Facebook as a portfolio was intended to exploit those benefits. Joseph explained, “Students will step up a little more. That gives them a little more reason for going for that extra effort.” Ann saw the public nature offsetting for her personally, but added that it also provided an opportunity for students to learn not to “put anything out there that you don’t want the whole world to see.” She also saw increased audience as a way for people to see the “kind of ideas that teenagers are capable of.” Ann wanted her students to use social media, and to take advantage of the increased audience as a way to spread the message in their social justice projects, thereby contributing to active citizenship in a democracy, as discussed by Cucinelli (2010), Livingstone, et al. (2008), and Redecker, et al. (2009). Finally, John also found that his use of openly accessible blogs acted as motivation for improved writing by his grade eight students. The appeal to a wider audience seems to make learning more real, or authentic, which can be a motivator for students.

Another reason that many of the participants gave for wanting to use social media has been alluded to in the previous paragraphs, and that is for motivation and engagement. It is thought that using social media tools in the ways described above will be engaging for students. Crook (2008) supported this factor, contending that Web 2.0 “offers activities that people already wanted to do” (p. 16). When talking about why she wanted to use social media, Ann offered, “For me, it’s about student engagement.” This was typical of several participants.

In all of the cases in the study, social media were used to fill a need or solve a problem. Whether it was to engage students in a book club blog (Ann), to engage in reflective thinking by using Facebook to share project progress (Joseph), to share links, resources, and reminders on Facebook or Edmodo (Mary and Nancy), or to learn about digital citizenship by collaborating on Google docs (Anthony), individual participants had their own goals and reasons for using social media. This purposeful implementation of social media echoes the work of Palfrey and Gasser (2008) and Mishra and Koehler (2006), who suggested that educational technologies have a place in schools, but they should be used appropriately in a thoughtful manner that puts learning first. This pragmatic approach, of course, implies that teachers are aware of the technologies available (Harris & Hofer, 2009) and how they can be used effectively, both of which reinforce the need for professional learning and time for planning.

What are some teachers' perspectives of their experience incorporating social media in their practice?

In chapter four, the perspectives of participants about their use of social media were described in the sections called benefits, concerns and barriers, and ethical and appropriate use – three of the main themes in the study. In this section, teachers' perspectives of their experience are summarized and then examined in more detail. The examination focuses on several main areas: affordances due to the social nature of the media, student engagement, personal (teacher) benefits, and various drawbacks, including social media as a distraction. Other drawbacks of using social media, as discussed by the participants, are discussed under the third research question regarding support and barriers.

Social nature. Most of the reasons for using social media, and many of the benefits described by participants, are due to its “social” nature. Ito et al. (2013), in their synthesis of research on connected learning, concluded, “Online information and social media provide opportunities for radically expanding the entry points and pathways to learning, education, and civic engagement” (p. 87). Numerous studies described in chapter two of this dissertation provided evidence and speculation about the learning affordances of social media. The positive results described by the participants included the following: increased communication between teachers, students, and parents; exposing student work to a larger audience (it should be noted that this was also seen by at least one participant as a both a concern and a benefit); and sharing and collaboration. As stated, many of the benefits, including those of increasing communication and

expanding the audience for student work, were also major reasons that several participants gave for their original decisions to use social media.

Collaborative work. One of the purported benefits of social media that received mixed results from participants was using the media to promote collaborative work.

Several studies found that using social media of various types led to increased collaborative work (Casey, 2013; Chen & Bryer, 2012; Pifarre & Staarman, 2011).

However, the participants in this study found mixed results. Recall from chapter four, that the principal of Prairie School explained that using social media for collaboration was, in his view, lacking. Sally, for instance, was using Google Docs for collaborative lab reports with some success, but she admitted that most of the students did not know how to collaborate. She reported that the students “still aren’t collaborating like they should.” Instead, the group members would divide up tasks rather than work together. Admittedly, this is not a problem with the platform, but it is something that Sally wanted to work on with the students. The medium offered the potential for students to collaborate and work on documents, even outside of the school, but the students seemed to lack certain skills for effective collaboration. Ann indicated that her use of social media had no effect on collaboration, although she stated that an activity she was planning in the future might impact that outcome.

Other participants, Anthony and James in particular, found collaboration was a benefit. However, this was the goal – and focus – of the activities they were engaged in. On the other hand, Nancy was not using social media for collaborative work at all. Interestingly, a study by Grant (2006) that looked at using wikis for collaborative work in secondary school age students, found that collaborative work was not very successful.

Grant (2006) pointed out that other skills and scaffolding of students are necessary to reap the benefits of the platform, which reflects Sally's experience. The results of this study, and others that found mixed results, are useful to illustrate that positive results from using technology rarely just happen; there must be a purpose and support to guide the use.

Student engagement. Student engagement was a major reason that participants had for using social media, and was also seen as a benefit after implementing these media. Most participants commented that they saw students were engaged while using social media. Nancy, for example, said that her students were very excited about Edmodo and liked its similarity to Facebook. Frank and John both pointed out that it was a change of pace from routine, something different, with John stating that student engagement showed "definite improvement." Additionally, John found that his use of blogs encouraged boys, in particular, to write more. Mary observed that the items she posted on the Facebook page were often engaging enough to prompt questions and discussion the next day in class, acting as advanced organizers. Anthony and James both talked about how social media provided "instant gratification" (Anthony), in that answers were obtained quickly, and this helped keep the students engaged as well. Ann, however, tempered these observations when speaking of her use of blogging. She explained that there was no big effect on engagement and that some students "were just interested in blogging as they read their first novel." She qualified her statement by adding that her lengthy absence from school on a leave "may have had an effect on that." Ann did express her notion that student engagement was very important to her, and that if social media had an impact, she would use it.

The effects on student engagement have been documented in other research, Casey and Evans (2011), for example, wrote about their study of social networks in the classroom, “It was clear . . . that those who were members enjoyed and appreciated the semester long opportunity to communicate and express themselves freely online” and that these connections “helped them become confident” (p. 15), which, in turn, affected learning. Moayari (2010) found in her research that social media was motivating for students. However, in one of the two cases studied, the “novelty quickly died” (p. 40) because of the amount of work involved. This was due, in part, to how the teachers involved in her study approached the network. This finding was paralleled by John, who commented that using various things, like social media, needs to be done “in moderation” in order to maintain the interest. Similar conclusions about increased motivation were reached by Heid, Fischer, & Kugemann (2009) in their examination of several case studies (note: not all of these cases were K-12). They did, however, point out that when the learner displayed low digital literacy, motivation was also low. This last finding may carry important ramifications for others, in that scaffolding of some students may be necessary. Thus we can see that using social media as a means of increasing student engagement is not simple, and while, according to the participants, it did just that, it is not a given. Other factors may be involved.

Teacher benefits. One of the positive results for several participants was the personal benefit arising from using social media. These advantages included the use of Twitter as a source of resources and ideas, as expressed by John and James in particular. James commented on how he found an abundance of ideas and resources by following coaches, other physical education teachers, and so on using Twitter. John also found this

a benefit, stating, “Using that resource, like Twitter, personally to look at that stuff . . . it helps me more than say, getting a half-day to go find resources on [my] own.” Such professional learning benefits are also described in the literature. Lieberman and Mace (2009) wrote about the promise of learning as part of an online community of professionals, “When teachers go public with their work, they open themselves up to learning, not only from their own practice, but also from research and others who help expand their knowledge” (p. 86). Razmeritia, Kirchner, and Sudzina (2009) concluded that social software has become important for identifying and accessing information.

Personal benefits described by participants did not stop with professional learning. Almost all talked about how social media helped to make their lives easier. For example, Nancy had a number of students at various worksites and Edmodo helped her to communicate easily with them, saving her time “because I am not chasing them around.” Frank found that helping students with math problems when they arose was a benefit not only because they received help when needed, but also because it fostered a better relationship with the students. Sally liked the fact that she could provide feedback easily and quickly to an entire group on their collaborative document, explaining that she could simply “highlight it, write a comment, or type it in a different colour.” Finding ways to use social media to make the life of a teacher more efficient and easier can be a powerful motivator to make use of it.

School environment. One of the most interesting findings was the observations that participants made about how the use of social media was affecting the school environment. While the case teachers described the school community as relaxed, supportive, innovative, and trusting, they also remarked that using social media, along

with other initiatives such as allowing students to bring their own devices, was a positive for the school. In particular, two ideas stood out. The first is that there was a new level of communication among students, teachers, and parents. Students contacted teachers in ways they were comfortable with – whether on a Facebook page, through Twitter, or texting – to seek help, ask questions, and so on. Mary suggested that many students were no longer “hesitant to approach” certain teachers. The second is that by allowing these technologies, “We are giving them that responsibility outside the classroom” (Nancy) and this has led to a more trusting atmosphere, giving students “more control” (Anthony) and helping them to be “more accountable” (James). Frank made the comment that as a result of using social media, more connections and better relationships were being made with students, especially ones that might not have occurred before.

Distractions? On the downside, the distracting nature of social media is a common theme in the literature. Popular books by Carr (2010), Powers (2010), and Rheingold (2010) are based on this issue. Books by scholars, such as Fullan (2013) and Turkle (2011) also warn about this, as does the academic literature (Rosin et al., 2013; Sana et al., 2013). Surprisingly, this issue was mentioned specifically by only two research participants, and only in passing. Sally laughed as she commented, “sometimes they are a little bit too comfortable. They are texting a little bit, too.” Frank described how he started allowing – and even encouraging – students to bring and use their smartphones in class. He attempted to head off problems by explaining how their reaction could make or break this privilege for the entire high school, asking for their cooperation and modelling appropriate use himself. Frank seemed to think this worked. The students responded to his giving responsibility and expecting it, and few, if any, issues arose.

While the specific topic of distractions was not overt, appropriate and ethical use of social media and mobile phones was important to all of the participants. Dealing with this issue was generally seen to be something important to do, and participants felt that it should be taught and modelled. Thus, the distracting nature of social media (and smartphones) did not seem to be a major issue or barrier for the participants. Perhaps this was a result of the trusting relationship in community and school, or the “relaxed” atmosphere.

Summary. Another important topic that played a prominent role in conversations with participants was the issue of online safety and privacy, and the related topic of digital citizenship. These topics are addressed under the next research question. To summarize, in general, the experiences of the participants with social media was positive. Issues did arise, challenges and barriers were present, and some questions remain. Concerns and challenges included time issues, technical issues, the learning curve and professional development, safety, ethical and appropriate use. Although not perfect, as the advice the participants presented attests, the overall experience was successful from the perspective of the participants.

Advice from the participants. At the end of the final interview, each participant was asked to share some advice for others. The advice given provided further evidence of the participants’ perspectives about using social media in the classroom. Every one of the participants stated that it was something teachers should use, or at least try. They did, however, almost without exception, include some provisos in their advice. The most common advice was to “use it . . . try it . . . get comfortable with it yourself” (James), “become familiar with it yourself” (Nancy), and “learn about it first” (Sally). Ann,

perhaps the most skeptical user, was very pragmatic with her advice to “set aside time to plan for the use of it, and always know how it links to curricular outcomes.” Joseph was also pragmatic in his recommendation that one should not simply use it “for the sake of using social media,” explaining that it needs to be infused and, similar to Ann’s advice, be a “tool to achieve an outcome.”

Frank added a note of caution to his advice, stating, “I would get involved with it, but I think you have got to be careful. That’s the other thing – there’s bad people out there.” This type of caution was also included in the advice given by others, including James, a frequent social media user, Mary, who had used Facebook for a number of years with her classes, and Sally, who was in the learning stages. Sally also added that someone wanting to make use of social media should be aware of the time needed to use and monitor its use. Such cautions are echoed in the literature about social media and education (Ahn, 2011; Heid et al., 2009; Schuck, Aubusson, & Kearney, 2010). Ross (2012) stated that “online disclosure” can be “risky in the sense that it is or has the potential to become public, and to be misused” (p. 197), and Thompson (2012) contributed that “attending to online security . . . has become a necessary passage” (p. 165). Cautions, such as the ones raised by the participants and in the literature, are clearly important ones and should not be dismissed.

Anthony’s advice was simple and straight forward, and, unlike the others, did not include any hint of caution, although he often talked about teaching appropriate use and digital citizenship. Anthony noted how the use of social media can empower students, stating,

I would say embrace it. Let them, the kids, roll with it. Give them some control to come up with the final product. You may be surprised at what they do. Act as a facilitator. Kids like that. They like having a bit of control.

John explained what it seemed several of the participants were saying. This is a long excerpt, yet it contains some advice to conclude this section,

I think it comes down to a comfort level, and some are a lot more comfortable with it and it's a sign of the times that you have to change. If I had to give someone advice, I would say it's something you have to try. It's something that the kids need, and you need, if you are going to grow. You can't be – you can't just stagnate, but it's, I don't know if you would say it's a marathon, it's not a sprint. I guess you can just jump in, but I always self-evaluate and think, "What could I do better?" And I think you can always do something better, but you can't beat yourself up if you're not on the cutting edge all the time. You know, if you can take a chance once in a while, then the more you do it, then the more you will be comfy with it . . . I'm not going to sit here and say I love it, because there are times when you do fall back and think "You know what? I am not going to do that today." But you can't say that every day. So I would say, my advice with social media would be to learn to crawl before you can walk. And then once you learn to walk, you can run. Now that I see the benefit, it's like, "How can you not?"

Figure 11 (p. 185) illustrates the key pieces of advice given by the participants for other teachers wishing to make use of social media in their teaching practice. The words are, in many cases, direct quotes from the participants. The advice described in the figure and in this section comes from a range of teachers using social media with varying levels of

comfort, experience, and expertise. It is very practical and is difficult to take exception with. It also sums up these teachers' views about implementing social media in their practice.

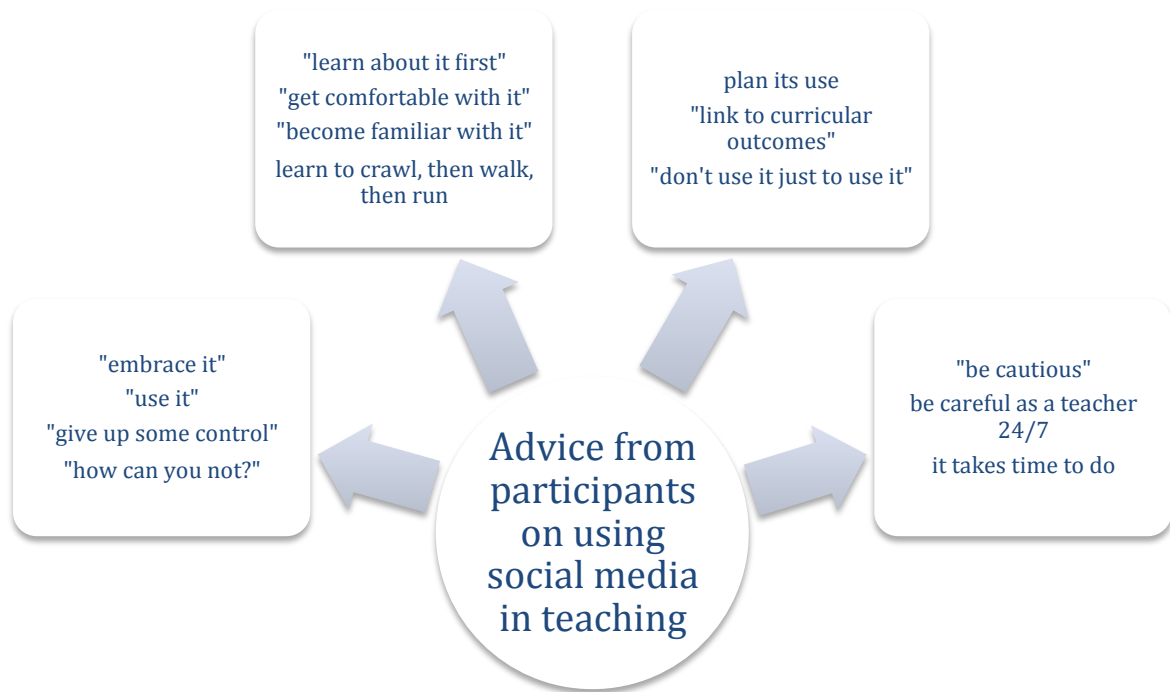


Figure 11. Advice from participants on using social media in teaching.

What factors support or hinder some teachers' use of social media in their practice?

Participants identified several areas of support as a result of their use of social media. These included technology resources, people resources, professional development, and time. Support for successful change or adoption of new innovations is vital. Cuban et al. (2001) maintained that many failed reforms are due to the lack of involvement of teachers in the process, and that many of these efforts did not "allocate sufficient resources to develop teachers' capacity to implement the desired changes, or provided sustained support to ensure that those changes became part of the teachers' daily routines" (p. 816). We have seen how one participant, Joseph, commented that one of his

challenges was to make the changes that he was introducing routine. When one examines the areas of support identified by participants, we see that they are also often listed as barriers to implementation, if not addressed.

Technology as both support and barrier. Technology is the first area that is important for teachers wishing to use social media. This makes sense, since without connectivity and access to technology, whether it be school owned or students' own devices, there is no way to use the media. Simply put, "Professionals who depend on technologies on a daily basis require reliable machines and software" (Cuban et al., 2001, p. 829). As we have seen, not having access to the necessary technology, and encountering technical problems, were noted by the participants as barriers to using social media. This finding was also cited in other studies (Brass & Mecoli, 2011; Chen & Bryer, 2012; Heid et al., 2009). In the summary of their report on several case studies of innovative practice using social media in Europe, Heid et al. (2009) wrote, "that the organization and users should have sufficient technical equipment (hardware and software) and the project should have a stable technical infrastructure" (p. 89). They added that a lack of these features could put a project using Web 2.0 tools at risk. This conclusion was also part of the findings of Sutherland et al. (2004). Although Prairie School had good access to technology and allowed students to bring and use their own devices, many participants commented that working and accessible technology was important. When it was not readily available, or not working, it proved to be a great source of frustration. In Nancy's case, changes to the platform and differences in computer versus smartphone apps caused issues for her, although she worked through them. For John, technical issues sometimes led him to abandon their use for a time. At

one point, he stated, “There are times it is easier for me to say, ‘This is not a computer assignment,’ so that’s a drawback.” Technology, working and accessible when required, was a key factor for the teachers in this study. As such the technology itself can act as either a support or a barrier to using social media.

People. The research participants also deemed people support important. Having students “buy in” and show patience when a teacher was implementing a particular media was seen as beneficial, as was support from parents and trustees. Prairie School seemed to be well supported by the community, which might help explain the participants’ relatively smooth implementation of social media tools. Casey and Evans (2011) discussed the importance of parental support, noting that the parents taking part in their study appreciated the use of the class social network. One source of “people” support mentioned by several participants was the support of administrators. In Prairie School, the principal not only supported the use of social media, but made some use of it himself. In a case study described by Heid et al. (2009), the support of administration, and of the organization, was seen as a “key factor for success” (p. 31). A final human support identified as being important in Prairie School was having someone in the school who could be called on for assistance. Joseph, and to a lesser extent James, filled that role in Prairie School. Several participants saw their encouragement and assistance as crucial. Having someone close by to help when needed was a boon for these teachers. This type of support leads us to the next area, professional learning.

Professional development. Every participant in the study mentioned professional development, in one form or another, during the interview process. It was also a theme in many literature studies and reviews of the research (Chen & Bryer, 2012; Heid et al.,

2009; Sutherland et al., 2004). Chen and Bryer (2012) pointed out that training and, “perhaps more importantly, individual experimentation is needed to understand what works, and in what circumstances” (p. 100). Learning by exploring was one of the key ways that several participants used for their own learning. This was exemplified by Nancy, who talked about her own learning about new technology. She stated that after learning about a topic, “I have to work through it myself, too.” Also important was simple awareness of what is available and how it can be used. This became evident in discussions with participants who talked about the importance of professional development, workshops, and even the use of Twitter to learn about new ideas for possible use. The need for awareness of what is possible was pointed out by Sutherland et al. (2004). They explained how teachers found that having ideas presented and discussed with them was beneficial. This study’s participants valued support and access to professional development opportunities, whether traditional, one on one, or just being given time to explore on their own. Frank summed up the feelings of many, stating, “But anyways, I think the biggest thing is just PD.” Of course, professional learning highlights the next area of support, and perhaps the biggest barrier to implementation as well, time.

Time. One of the major conclusions from a study about teacher attitudes toward social media use was that “teachers believed . . . that the major challenge was time” (Ray, Kalvaitis, Wheeler, & Hirtle, 2011, p. 867). The study by Ray et al. (2001) involved 20 teachers in Hawaii. Time, when available, is arguably the biggest support, and when not available, is the biggest barrier to using social media in teaching. This point was clear from this study: every participant included this challenge during interviews. The time factor was also exacerbated by other priorities. These priorities at Prairie School included

the demands of everyday teaching, extracurricular commitment, and the school focus on assessment. These varying priorities might differ in another context, yet competing priorities would no doubt be present.

The literature is replete with comments about time as the teacher's nemesis. For example, Chen and Bryer (2012) listed time constraints as a major barrier to using social media identified by faculty, in line with the findings of this study. The time factor was identified in many other studies and reviews. For examples, see Brass and Mecoli (2011), Bull et al. (2008), Crook (2008), Cuban et al. (2001), and Heid et al. (2009). Time is a factor in many aspects of implementing a new practice. While time cannot be created, it can be provided through things such as providing time in a teacher's schedule for preparation and exploration, allocating time for professional development, or shuffling priorities. The last is explained by the maxim stated by Ann, "If you have to add something, you have to remove something." There is only so much time available in the day, finding time to plan, play, learn, and balance this with a personal life is not an easy task. Whether or not some of these ideas are possible, time remains an issue that each school and individual must grapple with.

Missing barriers? A number of other barriers to implementing the use of social media were also identified by participants. Some concerns, which were mentioned in the literature, were conspicuous by their absence. One such barrier, identified by Friesen (2010), Friesen and Lowe (2011), and Lamb and Groom (2010), was the commercialization of many social media spaces. Another issue, related to commercialization, is the concern about the political nature of technology and the issues of power and inequity (Apple, 2008; Bromley, 1998; Selwyn, 2014). These issue were

not mentioned directly by any of the research participants. A few participants did talk about empowering students, and Ann discussed the use of social media as a means of activism (raising awareness of social justice issues), yet the conversations only hinted at these concerns. The reason for these omissions would be simply speculation. Either they did not occur to them during conversations, or these were simply not issues or concerns for them in their context.

Multiple spaces. Another barrier, or challenge, identified in this study is that of multiple spaces. This issue was talked about by Joseph and Nancy, and was a reason that certain media were chosen by other teachers. This issue, raised in a paper by Gray and Smyth (2011), refers to the neglect of certain social spaces when a person uses many such sites. In this discussion, Joseph and Nancy were speculating that if the teachers in Prairie School used many different media – for example, Facebook, Edmodo, and Twitter – the benefits might wane as students begin to neglect some of these spaces. This issue was not cited as a major barrier by any of the participants, but it was on their radar as the use of social media in the school developed, and it could be an important consideration for others.

Privacy, safety, fear, and opportunity. A final barrier to using social media, but also seen by some participants as a reason for embracing these media, were the issues of privacy and safety. These issues are predominant in studies and papers that examine the use of social media in education. In many cases, it is the most troubling issue for teachers, both out of concern for themselves and for their students while online (Ahn, 2011; Brass & Mecoli, 2011; Chen & Bryer, 2012; Crook, 2008; Schuck, Aubusson, & Kearney, 2010). In some cases, this concern took the form of fear and caution. For some,

like Ann, it was a major obstacle. She realized the potential benefits, but had an aversion to putting herself in such a public sphere. Ann explained, “You are in the public domain, or whatever, and it was like – forget that.” This concern was a struggle for Ann as she began making use of social media. Several participants shared cautions about using social media as a teacher, sharing anecdotes about repercussions faced by others for inappropriate use of social media. Frank, James, John, and Mary were all fairly frequent users of social media, and all expressed caution about what they shared in those spaces. These concerns were also applied to students using the media. While these cautions did not hinder the use of social media by the participants in this study, the concern reflected a thoughtful implementation and, in most cases, an opportunity to teach. It also reinforced the personal nature of how social media are utilized and that their use may not be for everyone, and at the very least might prove uncomfortable for them.

Every participant included the topic of ethical and appropriate use, or digital citizenship, in one or more of the interview sessions. We have seen how Ann, for example, had an aversion to using social media, yet she, like other participants, agreed that using social media opened up opportunities to teach and model appropriate use. This view is in line with authors such as Rheingold (2008, 2010, 2012) and Richardson (2009), who contended that teaching digital skills using social media is important for today’s youth.

Joseph summed up the thoughts shared by other participants, saying, “Part of it is working that ethical use of technology into the course and having those discussions with kids.” While these concerns are certainly a barrier, the participants in this study clearly did not see them as reasons not to use social media, but rather something that must be

kept in mind and dealt with. Joseph shared a story that he heard, that illustrated the views of many of the participants,

If you were living on an island and you put a fence around the island – I don't know where I heard this, but it stuck in my head. So you put a big fence up and there were sharks around the outside of the island, and you never explained why they [people] shouldn't go over the fence and go swimming on the other side. And they climbed over the fence, and the sharks ate them. I mean, it's the same idea, right? We have to explain to them why you don't go over the fence and get eaten by sharks. But why do you need the fence there in the first place, right? If you explain to them, if you go in the water and the sharks are going to eat you, and you educate them, then you don't need the fence in the first place.

The principal of Prairie School was like-minded in the approach that social media use should not be shied away from, that its use had many advantages, and that proper use must be taught. This research might prove useful to illustrate how these teachers, and indeed the school, addressed these concerns that are most likely to arise in other schools.

Summary: support and barriers. In summary, several areas of needed support and some barriers to using social media were identified by participants. These areas were also identified in the literature. In many cases, if support were available, the opposing barrier would diminish. In other cases, the barrier was still there and needed addressing. As an example, technology access and good connectivity were conducive to making use of social media. However, if technical issues arose, they became a barrier for some participants. Some of the barriers were small roadblocks for some individuals and major impediments for others. One lesson that can perhaps be learned is that there are always

various supports needed and barriers to address when implementing new ideas. These must be considered carefully, and often the benefits need to be weighed against the negatives in order to make an informed decision.

Does incorporating social media into teaching lead to change in some teachers' pedagogical practices and beliefs? If so, what is the nature of this change?

This research question was prompted by reflections on my own experiences and was informed by the work of several scholars, including Allen (2008), Cranton (2002, 2006), Cranton and Lin (2005), King (2002, 2009), Kitchenham (2006, 2010), and Velatsianos (2011), among others. The contention of several of these researchers (see Allen, 2008; King, 2006, 2009; Kitchenham, 2006, 2010; Velatsianos, 2011) was that using technology, and social media in particular, has the potential to lead to transformative learning in teachers. As I reflected on my own practice, I wondered about the experiences of others in terms of changes in practice and growth as they explore and use these media. Does the mere utilization lead to transformative (perspective) change? Are changes due to a single event, or disorienting dilemma (using social media), or a combination of factors resulting in gradual change over time (Cranton, 2006)? The perspectives of the case teachers about their own growth was informative in this regard.

If we look back to what the participants had to say about their practice in chapter four, we could conclude that, generally, transformative learning did not take place in the most of the participating teachers. If we recall, several participants reported that their use of social media had little or no effect on their practice, other than giving them a new set of “tools” or strategies to use. While a few participants talked about changes to their philosophy or pedagogical practices, only a few spoke of what might be considered a

perspective change. This change, moreover, appeared to be the result of several factors, and not just using social media.

Mary's transformation. Mary, in particular, talked about changes that she had experienced over time, describing how she had become more “flexible” over the course of her career, particularly in the past few years. She articulated that a number of factors contributed to the change, specifically mentioning changes in her assessment practices, but also suggesting that her use of social media probably played a role in that change –

It is hard to say which would be driving and which would be helping because there are so many factors that have sort of made me really change what I am doing . . . And so it's little things like that. I don't know exactly how social media ties directly to that, but it seems like the whole way that I am progressing, with everything that I am changing, is tied along with the social media. But it is all sort of churning in there together.

From this description, it appears that Mary did undergo transformative change, but it was not a single disorienting dilemma that was the turning point. Rather, it was a number of factors over several years that led to this change. This change could be described as transformative. It was a perspective change about teaching that led Mary to become a more flexible teacher, giving students more choice and responsibility – and hence power – over their own learning. This change certainly seems to fit the definition of transformative learning given by Cranton (2006), who described it as examining “problematic frames of reference to make them more able to change,” which could occur “gradually and cumulatively over time” (p. 36). This development in Mary's thinking and practice could also be described as dialectical development, as described by Basseches

(1984, 2005). Basseches (2005) defined the dialectic in adults as “developmental transformation (i.e. developmental movement through forms) that occurs via constitutive and interactive relationships” (p. 50). The key concepts in dialectic growth are an “emphasis on change, wholeness, and internal relations” (Basseches, 2005, p. 50). Basseches (2005) added that the direction of this movement is “usually associated with increasing inclusiveness, differentiation, and integration” (p. 50). In Mary’s case, she learned about new assessment ideas, learned about new teaching strategies, and continually tried these ideas (including making use of social media and smartphones). All the while, she was interacting with the new ideas, her teaching, and her students. All of this, in turn, led to changes in her teaching practice over time, a gradual growth influenced by a number of various life factors.

Anthony’s change. Anthony told a similar story to Mary. He talked about how his practice had changed over the years, and he credited much of the change to educational technology. Underlying it was a changed perspective about how he taught and how he gave power to his students during the time of the study. Anthony spoke of the changes,

Oh, I think so. I think very much so. Again, because I can see the benefits again from the ICT, especially of allowing these kids to collaborate with each other rather than me just going to each individual one and saying, “Yeah, you are on the right track. Maybe move this way.” They can do that on their own or they can come and say, they can come and glean [over their plan] for me, “Here’s what I am thinking. Is that okay?” “Sure, that’s good. Just keep this in mind,” and away

they go. So it's changed my perspectives. It's changed my philosophy. I have let a lot of control go.

Anthony was a long-time teacher who had recently transferred to Prairie School. A number of factors had led to this change that he said occurred over the previous five or six years. Anthony spoke of his teaching as being much more traditional in the past, with more direction, more demonstrations, and so on. At the time of the study, he was allowing more student choice, collaboration, and freedom in a "relaxed atmosphere." Anthony said that he had become more of a facilitator or guide, stating, "So I would think, yeah, I think it's a pretty big change." Anthony, like Mary, had undergone a major change, which was the result of several factors and took place over time.

Frank. Frank, when reflecting on change in his practice, thought that he would be a very different teacher in the next five years. Indeed, he talked about how he had become a "better teacher," commenting that educational technology, including social media, had played a role. John expressed that the biggest change he had noticed in himself was that he took more chances, trying new things. He stated that his use of social media "has enhanced the way I teach." These changes reflected small changes gained through experience and interaction with new ideas and strategies. These changes also reflected dialectical development as these teachers reflected on their practice and implemented changes because of this interactive relationship between new ideas and trends and their practice. These changes could be stages or "forms" along the path of their development as teachers.

Ann: disorienting dilemma? Ann was an interesting case. She characterized herself as always being a "student-centered, inquiry-based" teacher. Thus, she stated that

using social media did not really change anything, but “just added some tools.” However, her views about privacy and public were being challenged as she started to use social media. She had been reflecting about these changes and challenges to her thinking. Could this be a disorienting dilemma for her? When the study ended, Ann did not pursue the use of social media heavily because of other priorities that year. However, if she were to continue in this direction, perspective change could very well occur as she continued to struggle over private and public.

Transformative change? A number of things might explain why transformative learning was not evident in all participants. First, the cited studies by King (2002) and Kitchenham (2006, 2010) both included some sort of intervention, a class or professional development, about educational technology. Could this prompt be a necessary ingredient? I suggest that such support and prompting would be of benefit, yet, as Cranton (2006) wrote, “Learners must agree to undergo the process themselves” (p. 135). While the interview questions were designed to encourage the participants to engage in self-reflection about their practice, there was no guarantee that this reflection would take place. The time period of the study may also have been too short for such change to occur or to become apparent. Cranton (2006) observed that, in her experience, “Transformative learning is more often incremental than epochal” (p. 71). Finally, in many of these cases, the participants seemed to have an existing teaching philosophy that was hands on and student centered. Perhaps the use of social media was simply well suited to those already having this disposition. Evidence for this notion was discussed earlier in studies by Hermans et al. (2008), Overbay et al. (2010), and Rakes et al. (2006). All of these studies

indicated that teachers with a social constructivist philosophy were more likely to implement educational technology in their practice.

In answer to the research question, using social media can indeed affect change in a teacher's pedagogical practices and belief. In the context of this study, change may not occur in all teachers, and the change could be as simple as adding strategies to the teacher's existing repertoire. It may also lead to small changes in practices and beliefs accumulating over time, or contribute, perhaps with other factors, to deeper, transformative change.

Contributions, Significance, and Implications of the Research

This section of the chapter will include an examination of the contributions this research makes to the literature, the significant findings and interpretations, and finish with a look at the implications the research has for the field and for future research.

Contributions to the Literature

This study makes a significant contribution to the larger field of research into educational technology, and social media, in particular. It acts to help fill a gap in the literature. As noted earlier, it seems that the majority of research in this area has been focused on higher education; this study is focused on grades 7-12 public education. While there is room for more studies about using social media in elementary and secondary education, this study makes a contribution. It also took the teacher's perspective, not just teachers who are exemplars for using technology, but a range of teachers with varied experience and background. Selwyn (2014) suggested that scholarship about educational technology "should look beyond questions of how technology *could* and *should* be used, and instead ask questions about how technology is actually being used in practice" (p.

15). This study is an examination of how social media is used in actual practice by “everyday” teachers. In addition, the fact that all of the participants were located in one school, allowed a look at the effects of using social media on the school community. Further research in other school settings would deepen this understanding. Finally, this study was located in a rural setting in a small Canadian prairie town, small schools where innovation often occurs, even with a lack of resources (Wallin, 2009). To recall an earlier quote from Wallin’s study, “The stories of those who live and work in rural communities must be shared widely to bring to the attention of people their successes” (p. 5). This study takes a step to doing just that.

Implications and Significant Results

This research, while specific to the context of the school in which the participants were embedded, does have implications, both for those considering implementing social media in their practice, and for further research. In this study, the participants shared how they implemented social media, why they used it, and their perceptions of the results. The variety of media used and reasons for using it point to the personal nature of social media. Participants considered what they wanted to do and why they wanted to do it, and then used the media that enabled them to address that need. In some cases, one medium did not work as desired, so another was used. For example, Frank made use of Twitter as a way to communicate with students and parents, but he found that texting worked better for him and for the majority of his students. While he continued to use Twitter, his main focus turned to texting. When Frank was going to be away for a period of time, he needed a way to allow his students to continue moving forward in their learning, so he created mini-lessons and posted them on YouTube. He then invited his students to ask him

questions, if needed, using Twitter or texting. In this way, he used a combination of media to meet a need.

Joseph used Facebook as a kind of portfolio for his students' industrial arts projects. While other media might have filled the purpose better, he chose to try Facebook since it was what most of his students, and their parents, used. In this way, he made a working compromise to meet his goals.

Ann and John wanted to encourage their students to write and share their work with others. They chose blogging for that purpose. This medium provided a wider audience and the opportunity for conversation, along with the ability to maintain some oversight. In one incident, one of Ann's students cut and pasted a book review on the blog, illustrating that negative outcomes can occur. However, this incident also provided an opportunity for learning.

Anthony and James used various social media as a means to model and teach students how to use the media in ethical and appropriate ways. Nancy had a problem communicating with her off campus students doing work experience, and social media (Edmodo) provided a successful solution.

Sally's use of Google Docs illustrates the need for scaffolding. Students do not just collaborate because it is possible; they need the skills that enable it to happen. The software is simply the medium that allows them to do the collaborating at any time or place. Likewise, Joseph had to encourage and support his students when he used Facebook for reflective thought. Social media offer many affordances for learning, including, by definition, sharing and collaborating, as described in the literature and by the participants in this study. However, the success of the learning is not a simple matter

of using the media. It must be done for a reason and with scaffolding where necessary. While not employed explicitly in these cases, it might be useful for teachers to make use of a tool, such as *SWOT* analysis (Bosman and Zagenczyk, 2011), in which an innovation is examined for its strengths, weaknesses, opportunities, and threats, when considering implementation. Using such a model could lead to thoughtful action and possibly head off some of the issues that might otherwise arise.

In the remainder of this section, four significant findings resulting from this study will be briefly highlighted. Each has been presented in various places in this dissertation, however, this section will bring them together. The areas include: the confusing nature of the term social media and the importance of language, general interpretations about the expectations and pressures put on teachers, how social media can affect change in individuals and change in a school's environment.

Social media: A confusing term? One of the issues that arose in studying the broad topic of social media is coming to an understanding of what the term actually entails. Commonly used terminology is often unclear, and the term *social media* is no exception (Brussee & Hekman, 2009). In discussion with participants, it was clear that their understanding of the term varied. One common answer to the question, "What does the term *social media* mean to you?" was the example of Facebook or Twitter. In some cases, it was discovered that participants were actually using social media sites personally, but did not make the connection. For example, Ann was using Pinterest, a recent social curation/bookmarking site. It was being used without her making the connection to the social nature of the site. In discussion, she stated, "Oh, I love Pinterest." I responded, "Oh you do use it. Well, you're using social media, aren't you?" – to which

she responded, “Well, that’s just looking up cool things to cook and sew and – oh yeah, I’m on Pinterest every day . . . You know, I guess that is social media.” More participants’ descriptions of what social media meant to them can be found on pages 117-119, some of the key participant responses are also summarized in Figure 12 (p. 202). This clearly indicates that, even after a definition of the term was included in the recruitment letter (Appendix C), a variation in understanding was evident.

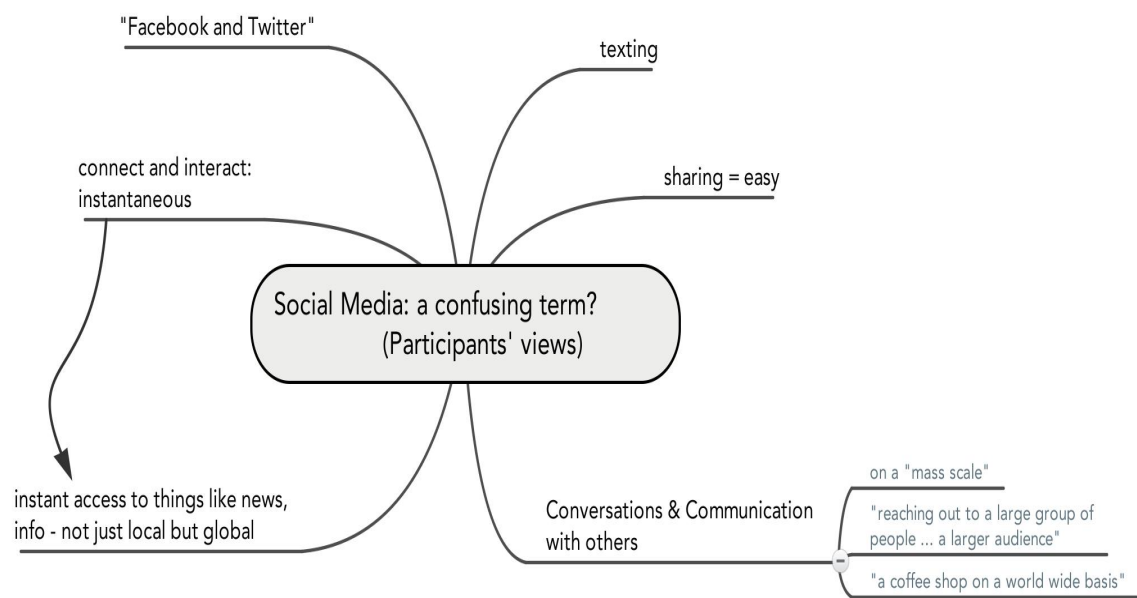


Figure 12. Social media, a confusing term: Participants’ understandings.

Confounding this problem, several participants used social media sites in their practice, yet mainly in a consumer-like fashion. For example, Sally used a wiki, but as a static web site for students to obtain information and resources. She did not use it interactively. Similarly, every participant used YouTube, but again, mainly as a source of videos to use in the classroom. Both of these are valuable and serve an educational purpose, but is this use “social”? The confusion over this phenomenon might be due, in

part, to the lack of a precise definition. A discussion of various literature definitions was provided in chapter two. Adding to the problem is that new social media platforms seem to appear daily, prompting Hogan and Quan-Haase, (2010) to proclaim, that social media is “a moving target” (p. 309) and Selwyn (2014) to write “the constituent elements of social media are evolving continually” (p. 106). Such a state of change makes a definitive definition difficult to come by.

As well, there are a number of terms with similar meanings. For example, Web 2.0 is often used synonymously with social media (Brussee & Hekman, 2009).

Sometimes a term is used when a narrower one would be better. As an example, social network sites (e.g. Facebook) are a specific class of social media (boyd & Ellison, 2007); however, the term *social media* is often used to refer to such sites, possibly leading to more confusion. The result of the often-ambiguous meanings of terms then leads to misunderstandings in conversations. The language we use can be a source of confusion in our conversations and in research. Thus, it is important to be clear about the meaning and context of the words being used.

Even in this study, texting was not considered as a social medium by the definition used (Kaplan and Haenlein, 2010), yet it often came up in interviews. In another interesting observation, Nancy explained her understanding of social media as the use of a computer to communicate with other people. After thinking about this, she said, “In that case, a cell phone would be social media to me, I guess, eh?” In one instance her thinking was about communication. Then she applied it to a smartphone, a particular device, since it allowed her to do this type of communicating. These considerations could all lead to misunderstanding during a conversation. This was not necessarily a bad thing;

it just serves to illustrate the confusion over the use of the terminology. It also shows how many of these technologies, both hardware and software, are beginning to overlap in purpose and functionality, further confounding our understanding. As a result, I would suggest that research in this area should clearly define or explain the topic of study. Often authors make use of the term and then proceed to examine a particular type of media, and few define the term at all. Perhaps research should confine itself to specific types of media, although research with a broader scope, such as this dissertation, are valuable, however, the terminology used needs to be clearly understood.

As a starting point, I propose the following definition of *educational social media* in order to stimulate thought in this area: Educational social media are Internet-based participatory media that engage users in creating, synthesizing, and sharing content, ideas, and questions, both original and otherwise, through commenting, posting of a variety of media, tagging, conversation, debate, curating and organizing, and collaboration. These interactions usually occur with groups of people, that is, one to many, or many to many. The purpose of using social media in education is meant to enhance and promote learning. As such, the pedagogical uses of social media are distinct from the intended use of marketing, personal socializing, or other purposes. If we wanted a short description, one that would summarize the key educational purpose of social media, I suggest the following. Educational social media is constructivist learning: anytime, anywhere.

Pressure to use social media and the teacher. In previous sections, challenges and barriers to using social media were alluded to. Often, teachers have received the blame for the seeming lack of success in integrating educational technology in the

classroom (Cuban, 2001; Feng and Reeves, 2003). This study illustrates that the teachers were not reluctant to use new technologies, such as social media, but were willing to embrace and try innovations that would enhance learning for their students or that would make their work more efficient. One of the major reasons participants had for using social media was the contention that it is part of the students' world and is a way to make learning more meaningful for them. Such findings reinforced assertions by Garrison and Bromley (2004), who suggested that teachers are not fearful of change, nor lazy when they have difficulty using educational technology. Similarly, Cuban et al. (2001) found that teachers' age, experience, gender, and so on were not factors in technology use. Nor were teachers generally resistant or technophobic. Instead, a number of other issues interfered, including systemic issues such as a lack of time, resources, and reliable technology. The teachers in this study mentioned all of these concerns. The greatest barrier was, perhaps, time – time to learn about social media, time to plan its use, time to explore and “play.” The participants also noted how changes to a platform, technical problems, and not always having access when needed, led to frustration and sometimes lack of use. Other issues and concerns, such as privacy and distraction, also influenced their thinking and use of social media.

Another issue that has implications is that, in some cases, teachers are simply not aware of what is available or how it may be used in a pedagogically sound way. This again can be related back to the time issue, yet it is more than just having time. Knowing where to find exemplars of successful implementation, being able to think creatively about how a particular medium can fill a particular need, and critically thinking about the appropriate use of the technology are important considerations.

In describing how Mishra and Koehler's (2006) technological, pedagogical, and content knowledge (TPACK) model (see Figure 1, p. 46) can help teachers to design powerful learning activities, Harris and Hofer (2009) stated that "successful technology integration is rooted in curriculum content and students' content-related learning processes primarily, and secondarily in savvy use of educational technologies" (p. 99). This was how the teachers in this study tended to do their planning: considering their goals, the problem to be solved, then how social media might help meet those goals. If, however, they do not have the knowledge of what social media tools are available, or what they can offer, then it limits the strategies that they can employ. Thus, as the teachers in this study proclaimed, professional learning is also important for the utilization of social media. These various issues, along with other concerns described in the findings, arose in a school with good access to resources and connectivity. What would happen in schools without these advantages? Even with the concerns and challenges, however, these teachers made an effort to move forward in a thoughtful way for their students. In the end, these teachers did have the desire to learn and to improve their practice. They just needed the supports to enable them to do so. If utilization of new educational technologies, such as social media is deemed important, then a process that addresses the issues of awareness, professional learning, and time for exploration and planning should be a priority.

Transformative learning? One of the research questions in this study asked about change, in particular about changes in a teacher's pedagogical practices and beliefs. Many academics have suggested that the implementation of social media (or Web 2.0) can provide opportunities that can lead to transformative change (Hughes et al., 2011;

King, 2011; Velatsianos, 2011). In this study, changes to the participants' pedagogical practices were found, mainly consisting of the addition of new strategies and methods of communication to the teachers' repertoires. In a few cases, deeper change was seen, but as the result of several factors that appeared to have their beginnings well before this study commenced. The changes that could be considered as transformational were a result of incremental change over time (Cranton, 2006). Implementing the use of social media was only one aspect of the change. Snyder (2008) contended that transformative change is not likely to be seen in a time period as short as a single semester. If perspective change is the goal, it would seem that more active interventions and support would be necessary in order to provide the opportunity for examining perspectives and reflective thought (King, 2011; Veletsianos, 2011). Enabling deep, lasting change is complex. King (2011) stated that "transformative learning with technology most often happens in a supportive, constructivist, learner-centered environment" (p. 7). It would appear that Prairie School provided such a context, and some major changes were, indeed, described by some participants.

It could be concluded from this study that transformational change is possible and that using social media can play a role in that change. Ann was wrestling with a conflict about her private nature and the public nature of social media, perhaps the beginning of a perspective change? Mary, appeared to have undergone what might be considered as transformational change, however it appeared to be the result of a number of factors over time. Indeed, it seems that a shift towards a more learner-centred approach is the result of the changes described by participants in this study. This does make sense when one considers that the basis of social media is not technological, but social. Based in this

study and the results of studies by King (2009, 2002) and Kitchenham (2006) it would appear that some sort of intervention would help spur transformative learning. This will be discussed later in this chapter in the section Implications for Further Research.

School level change. When considering change, an interesting finding that was described during this study was the effect on the school environment. The changes that the participants observed about the school environment were no doubt the combination of many factors and not just the growing use of social media. Prairie School also had a focus on progressive assessment practices, was technology rich, and was experimenting with the idea of students using their own devices, including smartphones. In addition, many teachers were experimenting with using social media in their teaching practice. What participants described was a trusting and caring school environment that seemed to grow and develop with the increased responsibility and trust engendered by new ways of connecting and communicating. According to the participants, students were making connections to teachers that they would not have made before, asking for help when needed, making personal connections that were not made previously, and showing responsibility as a result of the trust given.

Several of the teachers talked about “a sense of empowerment” (John), “more freedom” (Anthony), autonomy, and “giving kids as much choice and control as you possibly can” (Ann). Garrison and Bromley (2004) investigated the role of the social context and power relationships in the use of computer technologies in schools. They found several negative outcomes as the use of computers was “swept up into ongoing conflicts and social processes” (p. 591) related to power and control. In the cases they examined, the pressures of teaching led to a “destructive” (Garrison & Bromley, p. 609)

use of computers. In Prairie School, the school environment led to a more effective use of technology (social media, etc.) that acted to empower students even more, even though the teachers expressed concerns and challenges. This type of use is an example of the “critical techno-mania” described by Weaver and Grindall (1998), in which technology has been used with thought and to “enhance the processes of empowerment” (p. 239) of students in their relationships with teachers. This type of school level change is an area that should be examined further.

Implications for Future Research

As a result of conducting this research, several avenues for further research have become evident. One of the problems of this area of research is that the rapid pace of change makes “social media . . . a moving target” (Hogan & Quan-Haase, 2010, p. 309). Hogan and Quan-Haase (2010) also suggested that a goal of research work in social media is to move to a “greater understanding of users” and “adoption trends” (p. 313). The suggestions for further research here also take into account directions suggested by other scholars in the field (Cuban, 2012; Bower, et al, 2010; Greenhow, Robelia, and Hughes, 2009; Selwyn, 2012; Windschitl, 1998). These suggestions include using qualitative approaches, examining the role of pedagogy, being aware of context, and including the perspectives of teachers and students.

One of the questions posed in this study was to examine potential changes in teachers’ perspectives and pedagogical practices. Compared to other studies, such as those by King (2009, 2002) and Kitchenham (2006), this study did not include any interventions that would influence practice. While the mere implementation of social media could be considered an intervention, it was not a planned one. In the studies

mentioned, planned interventions took place and acted as a catalyst for the learning. In the case of King's research, participants were involved in specific professional development about educational technology (King, 2002) or university courses in educational technology (King, 2009). Providing specific professional learning was also the case in a study of transformational learning and technology conducted by Kitchenham (2006). The study conducted for this dissertation did not involve direct interventions. Although some participants were involved in some related professional learning during the course of the study, it was not part of the study procedure. Of course, the mere act of taking part in the study, being interviewed, and asked to reflect on practice is an intervention of sorts, albeit a passive one (G. Cockerline, personal communication, September 6, 2013). It would be interesting to see whether some sort of active intervention, such as a teacher working with a mentor in an action research approach, would be more likely to lead to lasting perspective change.

A second extension of the research conducted would be to include the perspectives of other educational stakeholders. This study was limited to teachers for several reasons. One was to examine the teacher perspective specifically, since it is often overlooked in the implementation of various technologies. Extending the research to include the perspectives of students in particular, but also parents and school administrators at all levels could be included. For example, if social media are implemented in a course, what do students think? Does it really engage them? Is it seen as intruding on their personal spaces (the creepy treehouse effect)? Is the issue of multiple spaces a problem for them? Comparison of these perspectives could lead to a more extensive picture of the phenomenon.

Finally, extending the study to include a number of teachers in several schools would yield the ability to examine closely the effect of school variables on the use of social media. This study was useful, since all the participants were from the context of a single school. Thus, factors particular to the school, which might have a bearing on the teachers' experiences, could be identified. The participants generally described Prairie School as welcoming, comfortable, and innovative. What would happen in a school with a different culture? Extending the study to include several schools would facilitate comparison of these factors between schools, and could build on previous research looking at school culture and technology adoption, such as that conducted by Kitchenham (2010).

Summary of Findings and Recommendations

In this section, a summary of the major findings and recommendations resulting from this study are presented in list form.

Findings

- The teachers in this study had varying understandings of what constituted social media. This variation is also seen in the literature. Some participants were unaware that they were making use of such media. This confusion acts to confound research in this area. Such confusion can occur around many of the everyday terms we use, clear understanding of these terms would help defuse some of this confusion.
- It would appear that teachers have a variety of underlying reasons for using social media. The teachers in this study made use of social media in a variety of ways, to meet a variety of purposes. One common reason for using social media was given

by almost all the participants. They contended that it is a technology that students are using in their everyday life and that they should therefore be utilizing these media in the classroom. Other purposes for using social media included, a means to increase communication with students and parents, to motivate and engage students, to prepare students for life after school, to share student work with a broader audience, to assist with collaborative work, and to teach the appropriate and ethical use of social media. These varied reasons point to the personal and contextual nature of the media, there is no one best tool to use, or way to use it.

- Teachers in this study identified a number of factors that supported their use of social media. Among these were access to working technology and good connectivity; support from all stakeholders, including students, parents, and administration; technical support; and professional learning opportunities.
- Teachers in this study identified a number of factors that hindered the use of social media. These factors were, in many cases, the opposite of the factors listed in the previous point as supports. In particular, a lack of access to technology, or technology that was not working, hindered use. Other issues that were described were privacy, safety, and the possibility of the technology acting as a distraction. The problem of multiple spaces was a potential issue, which is the use of too many online spaces, leading to some being ignored. Finally, the biggest concern or barrier was a lack of time, due to competing priorities and hectic schedules.
- It would appear that the use of social media had an effect on the teachers' pedagogical practices. For some, the change was the addition of new strategies to their "toolbox." For others, the change could be considered as transformative, but

this conclusion is made with some caution. While there is evidence for this type of change in some participants, it usually occurred in concert with other factors. To determine whether changes are transformative, a longer period of observation, or an active intervention, might be needed. More study in this area would be useful.

- Participants also noted that using social media, in conjunction with other factors such as allowing the use of personal devices, had observable effects on the school environment. Participants described an increase in communication between students and teachers, and a sense of student empowerment that fostered a culture of respect, responsibility, and trust. This interesting result warrants further study.

Recommendations

- Due to ambiguity in the meaning and understanding of the term *social media*, it is recommended that caution be used in research into the use of social media. For studies examining the effectiveness or results from using social media, it might be beneficial to focus on a particular type of social medium, or have a carefully explained meaning of the way the term is used in the study. Even if participants did not know that they were using social media, they did know what program(s) they were using. This study gives rise to the need for a precise definition of educational social media. Whether such a definition is possible is left for speculation and future theoretic research. This study has shown the difficulty of defining social media narrowly for pedagogic uses, and yet this lies at the crux of its potential.

- Research into the use of social media should be continued. It continues to grow in both personal and educational use. It has many postulated affordances and reasons for caution, thus examination of how it is actually used in practice is important to the educational community.
- It would be useful to study particular affordances of social media as discussed in this paper. Examples include the potential for increased audience for student work and the effects of this on learning and motivation, or how various social media can truly be used to engage students effectively in collaborative work.
- It would be useful to perform similar studies in other schools with different school environments, in order to study the effects on teacher practice and the school culture.
- While this study examined teachers who made use of social media, it might be useful to research teachers who do not use these media, in an effort to understand their underlying thinking in comparison to those who do use social media.
- Further study examining transformative learning as a result of using social media would also be beneficial. An action research approach with active intervention, and/or a study with a longer time frame, could further this area of research.
- Finally, for teachers wishing to make use of social media in the classroom, it would appear from this study that a well thought-out plan and purpose for using social media, professional learning, and time to explore both the tools and how they can be implemented, are important to successful use.

Concluding Remarks

*Some of what is unfolding is exciting, some is terrifying.
The key is not to be all utopian or dystopian
but to recognize what will change
and what will stay the same”
(boyd, 2010, p. 36)*

Social media, and other recent technologies such as interactive whiteboards and tablets, have been hailed as the next great thing, the “silver bullet” that will transform education. However, as Cuban (2012, 2001, 1986) and others have reminded us, schools have adopted many technologies over the years, and, for a variety of reasons, the expected results generally do not materialize. Hlynka (2009) wrote about the cycle of hype and rush to integrate, or as he called it a “just do it” (p. 50) mentality rather than a “think and do” (p. 52) model. In this view, the latest innovation is adopted with little thought or planning, often without proper preparation of teachers or consideration of what will be gained and what will be lost. Papert (2005/1980) described this syndrome, “The phrase ‘technology and education’ usually means inventing new gadgets to teach the same old stuff in a thinly disguised version of the same old way” (p. 353). Is social media the latest of these cycles?

This research was prompted by such musings. The study set out to answer the following questions:

1. How, and why, do some teachers use social media as part of their practice?
2. What are some teachers' perspectives of their experience incorporating social media in their practice?
3. What factors support or hinder some teachers' use of social media in their practice?

4. Does incorporating social media into teaching lead to change in some teacher's pedagogical practices and beliefs? What is the nature of this change?

The answers to each of these questions were discussed in detail in this chapter. The answers, while not always conclusive, have helped illuminate teaching using social media from the perspective of the teacher.

By now we should surmise from this study that education is complex, and people are different. The comments of one participant, Sally, indicate that perhaps social media is not a silver bullet. While generally describing the increase in student engagement when she adopted the use of Google docs for lab reports, she also said of a few students, “They didn’t feel comfortable. They still wanted to use paper. I was so surprised because I thought they would be right into that.” Joseph was also cognizant that social media are not for everyone. He suggested giving choice to students, “I think the other part of it is allowing kids freedom in what tool they are going to use as well. So, then you don’t force kids into using social media if that’s not what they want to use.” Technology use might be close to ubiquitous in our society, but it is also personal: what works for one person may not work for another, what works in one context, may not in another. The issue of multiple spaces, the variety of social media used by the participants in this study, and the purposes for which it was used, is evidence of that. Confounding the situation is the problem of technological overload described in books such as *Hamlet’s Blackberry* (Powers, 2010) and elsewhere. How much is too much? The answer to this question is probably dependent on the person and the context. These considerations are important ones to think about.

While the results of this study are specific to the context of Prairie School, we can, perhaps, learn something from it. Implementing social media, or any innovative technology, is dependent on the context, the purpose for using it, the school community, the teachers, and the students. To be successful, there should be a well-defined reason or purpose. As various studies described in this dissertation tell us, using technology to do the same “old stuff” in a different way may not change much, but it can be a beginning to a larger change. “Attempts at integrating technology within education, however, have often focused on enhancing the efficiency and effectiveness of the status quo, replacing traditional instructional practices with ones that are technologically reinforced, yet qualitatively similar” (Veletsianos, 2011, p. 41). Other scholars have made the same point, including Hughes et al. (2011), who stated that Web 2.0 tools could be used to move past this cycle and support real transformation of education. While new technology, such as social media, may provide the means to make real innovative change in education if implemented in a thoughtful way, sometimes, merely improving current practice and taking small steps to bigger change is acceptable. The teachers in this study have made some of these steps: some small, some larger. They were, however, moving ahead with thought, following Hlynka’s (2009) advice of “think and do” (p. 52). They were growing and changing in the process.

The primary motivation that they displayed was a desire to do the best for their students. For example, improving communication, illustrated by Mary’s use of Facebook, was successful. It increased connections with her students and in some cases parents, and it contributed to her pedagogical growth, in order to become a more flexible teacher. John felt more confident taking chances and trying new things, as he saw positive results from

expanding the audience for his students' work. Ann struggled with her own concerns about social media, yet saw how these media could be used to enhance learning in her classroom and help her students to address issues of social justice. Sally was using a wiki to create a place to provide resources to her students. She had moved to using Google docs for students to collaborate on their lab reports and other work. This move helped her to improve her assessment practice, add more hands-on activities, and teach her students important skills about working collaboratively. Along with Frank, Sally planned to implement a class blog in the future. These were important changes that the teachers made to improve learning for their students, even with the time constraints that they faced.

It is of interest, however, how these teachers noticed that the use of social media, along with movement to allowing students to use mobile devices, led to changes in the school environment. Communication increased and connections improved with students in a culture of trust and responsibility. Of course, it must be remembered that this is one context. As described earlier, a comparison with the experiences of other teachers in other schools would be a valuable extension of this research.

Can social media use in teaching lead to change in pedagogical practice? In this study, the answer is a qualified "yes." The participants, at the very least, added new strategies and tools to their repertoires. In other cases the use of social media, in conjunction with other things, led to bigger, deeper change. Would a more direct intervention lead to more change? Other studies indicate that it would (King, 2002; Kitchenham, 2006, 2010). That potential does seem to exist, since even the "passive intervention" of being asked to reflect on practice prompted some participants to

comment that it forced them to keep up their use of social media and prompted them to think about other ways to use the media.

This study gave us a glimpse into the thinking of some teachers as they worked to incorporate social media in their teaching practices in a rural Manitoba school. We have learned about their reasons for using it, what they used the media for, the benefits they experienced, and the concerns and challenges they faced. They also shared what they thought were needed supports and how the experience changed them. It was evident that these teachers were constrained by time and opportunity. Often, they were not aware of what was available and what could be done, even in a supportive and innovative school environment. Professional learning and the time to do it are important commodities.

Although the experiences of these teachers were specific to their situation, this study does have significance for others considering the use of social media in their practice, and to the larger concept of teacher change. This study also fills a need in the literature, due to its focus on grades 7-12 rural education and on the perspective of the practitioner – the teacher. It bodes well that each of these participants was a professional who “thought and did,” to actively find the “sweet spot” to engage their students in learning, and that, perhaps, is the most important lesson to be learned.

References

- Adams, C. A., & Thompson, T. L. (2011). Interviewing objects: Including educational technologies as qualitative research participants. *International Journal of Qualitative Studies in Education*, 24(6), 1-18.
<http://dx.doi.org/10.1080/09518398.2010.529849>
- Agarwal, N. (2011). Collective learning: An integrated use of social media in learning environment. In B. White, I. King, & P. Tsang (Eds.), *Social media tools and platforms in learning environments* (pp. 37-51). New York, NY: Springer.
- Ajjan, H., & Hartshorne, R. (2008). Investigating faculty decisions to adopt Web 2.0 technologies: Theory and empirical tests. *Internet and Higher Education*, 11, 71-80. <http://dx.doi.org/10.1016/j.iheduc.2008.05.002>
- Alibrini, A. (2007). The crisis of educational technology and the prospect of reinventing education. *Educational Technology & Society*, 10(1), 227-236.
- Allen, G. (2008). Practicing teachers and Web 2.0 technologies: Possibilities for transformative learning. (Doctoral dissertation). Retrieved from ProQuest. (UMI No. 3327101)
- Ahlqvist, T., Back, A., Heinonen, S., & Halonene, M. (2010). Road-mapping the societal potential of social media. *Foresight*, 12(5), 3-26.
- Ahn, J. (2011). The effect of social network sites on adolescents' social and academic development: Current theories and controversies. *Journal of the American Society for Information Science and Technology*, 62(8), 1435-1445.
- Amiel, T., & Reeves, T. (2008). Design-based research and educational technology: Rethinking technology and the research agenda. *Educational Technology &*

Society, 11(4), 29-40.

Anderson, P. (2007). What is Web 2.0? Ideas, technologies and implications for education. *JISC Technology and standards watch*. Retrieved from <http://www.jisc.ac.uk/publications/reports/2007/twweb2.aspx>

Apple, M. W. (2008). Can schooling contribute to a more just society? *Education, Citizenship and Social Justice*, 3(3), 239-261.
<http://dx.doi.org/10.1177/1746197908095134>

Ayers, M. P. (2011). *Toward authentic audiences: Blogging in a high school English classroom*. (Unpublished doctoral dissertation, University of Iowa). Retrieved from <http://ir.uiowa.edu/etd/2669>

Baker, F.W. (2010). Media literacy: 21st century skills. In H. H. Jacobs (Ed.) *Curriculum 21: Essential education for a changing world* (pp. 133-152). Alexandria, VA: ASCD.

Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice-Hall.

Basit, T. (2003). Manual or electronic? The role of coding in qualitative analysis. *Educational Research*, 45(2), 143-154.
<http://dx.doi.org/10.1080/0013188032000133548>

Basseches, M. (1984). *Dialectical thinking and adult development*. Norwood, NJ: Ablex.

Basseches, M. (2005). The development of dialectical thinking as an approach to integration. *Integral Review*, 1, 47-63.

Baumgartner, L. (2001). An update on transformational learning. *New Directions for Adult and Continuing Education*, 89, 15-24.

- Bebell, D., Russell, M., & O'Dwyer, L. (2004). Measuring teachers' technology uses: Why multiple measures are more revealing. *Journal of Research in Technology in Education*, 37(1), 45-63.
- Bosman, L., & Zagenczyk, T. (2011). Revitalize your teaching: Creative approaches to applying social media in the classroom. In B. White, I. King, & P. Tsang (Eds.) *Social media tools and platforms in learning environments* (pp. 3-15). New York, NY: Springer.
- Bower, M., Hedberg, J. G., & Kuswara, A. (2010). A framework for Web 2.0 learning design. *Educational Media International*, 47(3), 177-198.
<http://dx.doi.org/10.1080/09523987.2010.518811>
- boyd, d. (2007). The significance of social software. In T. N. Burg & J. Schmidt (Eds.), *Blogtalks reloaded. Social software – Research & cases* (pp. 15-30). Norderstedt, DE: Books on Demand.
- boyd, d. m. (2008). *Taken out of context: American teen sociality in networked publics*. (Unpublished doctoral dissertation, University of California-Berkely). Retrieved from <http://www.danah.org/papers/>
- boyd, d. m. (2010). Streams of content, limited attention: The flow of information through social media. *Educause Review*, 45(5), 26-36.
- boyd, d. m., & Ellison, N. B. (2007). Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication*, 13(1), article 11.
Retrieved from <http://jcmc.indiana.edu/vol13/issue1/boyd.ellison.html>
- Brandon University. (1990). *Brandon University mission statement*. Brandon, MB: Author. Retrieved May 10, 2012 from www.brandonu.ca

Brandon University. (n.d.). *Faculty of Education mission statement*. Brandon, MB:

Author. Retrieved May 10, 2012 from <http://www.brandonu.ca/education/mission-statement/>

Brass, J., & Mecoli, S. (2011). The (failed) case of the Winston Society wikispace: The challenges and opportunities of Web 2.0 and teacher education. *Contemporary Issues in Technology and Teacher Education*, 11(2), 149-166.

Brown, J. S. (2008). Growing up digital: How the web changes work, education and the ways people learn. In P. Murphy & K. Hall (Eds.), *Learning and practice: Agency and identities* (pp. 193-201). London, England: SAGE.

Brown, J. S., & Adler, R. P. (2008). Minds on fire: Open education, the long tail, and learning 2.0. *Educause Review*, 43(1), 16-32.

Bromley, H. (1998). Introduction: Data-driven democracy? Social assessment of educational computing. In H. Bromley & M. W. Apple (Eds.), *Education/Technology/Power* (1-25). Albany, NY: State University of New York Press.

Brusse, R., & Hekman, E. (2009). Social media are highly accessible media.

Crossmedialab. Retrieved from CrossMediaLab web site: <http://crossmedialab.nl/>

Bull, G., Thompson, A., Searson, M., Garofalo, J., Park, J., Young, C., & Lee, J. (2008). Connecting informal and formal learning experiences in the age of participatory media. *Contemporary Issues in Technology and Teacher Education*, 8(2), 100-107.

Canadian Council on Learning. (2009). *State of e-learning in Canada*. Ottawa, ON:

Author. Retrieved from <http://www.ccl-cca.ca/CCL/Reports/StateELearning?Language=EN>

- Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, and Social Sciences and Humanities Research Council of Canada. (2010). *Tri-Council policy statement: Ethical conduct for research involving humans*. Retrieved from <http://www.pre.ethics.gc.ca/eng/policy-politique/initiatives/tcps2-eptc2/Default/>
- Carr, N. (2010). *The shallows*. New York, NY: W.W. Norton.
- Casey, G. (2013). Social media in the classroom: A simple yet complex hybrid environment for students. *Journal of Educational Multimedia and Hypermedia*, 22(1), 5-24.
- Casey, G., & Evans, T. (2011). Designing for learning: Online social networks as a classroom environment. *The International Review of Research in Open and Distance Learning*, 12(7), 1-26.
- Cha, J. (2010). Factors affecting the frequency and amount of social networking site use: Motivations, perceptions, and privacy concerns. *First Monday*, 15(12). Retrieved from <http://firstmonday.org>
- Chen, M. (2010). *Education nation: Six leading edges of innovation in our schools*. San Francisco, CA: Jossey-Bass.
- Chen, B., & Bryer, T. (2012). Investigating instructional strategies for using social media in formal and informal learning. *The International Review of Research in Open and Distance Learning*, 13(1), 87-104.
- Clark, R. E. (1983). Reconciling research on learning from media. *Review of Educational Research*, 53(4), 445-459.

- Clark, R. E. (1994). Media will never influence learning. *Educational Technology Research and Development*, 42(2), 21-29.
- Cobb, T. (1997). Cognitive efficiency: Toward a revised theory of media. *Educational Technology Research and Development*, 45(4), 21-35.
- Coiro, J., Knobel, M., Lankshear, C., & Leu, D. (2008). Central issues in new literacies and new literacies research. In J. Coiro, M. Knobel, C. Lankshear, & D. Leu (Eds.), *Handbook of research on new literacies* (pp. 1-21). Mahwah, NJ: Routledge.
- Converse, M. (2012). Philosophy of phenomenology: How understanding aids research. *Nurse Researcher*, 20(1), 28-32.
- comScore. (March 2011). *Canada digital year in review 2010*. Retrieved from http://www.comscore.com/Press_Events/Presentations_Whitepapers/2011/2010_Canada_Digital_Year_in_Review
- Conceicao, S. (2002). The sociocultural implications of learning and teaching in cyberspace. *New Directions for Adult and Continuing Education*, 96, 37-45.
- Costa, C. I. (2013). The participatory web in the context of academic research: Landscapes of change and conflicts. (Unpublished doctoral dissertation, University of Salford). Retrieved from <http://usir.salford.ac.uk/28369/>
- Coppola, E. M. (2004). *Powering up: Learning to teach well with technology*. New York, NY: Teachers College Press.
- Crang, M., & Cook, I. (2007). *Doing ethnography*. London, England: SAGE.
- Cranton, P. K. (2002). Teaching for transformation. *New Directions for Adult and Continuing Education*, 93, 63-71.

- Cranton, P. K. (2006). *Understanding and promoting transformational learning*. San Francisco, CA: Jossey-Bass.
- Cranton, P. K., & Lin, L. (2005). Transformative learning about teaching: The role of technology. In D. Vlosak, G. Kielbaso, & J. Radfors (Eds.) *Proceedings of the Sixth International Conference on Transformative Learning* (pp. 99-104). East Lansing, MI: Michigan State University and Grand Rapids Community College.
- Creswell, J. W. (2007). *Qualitative inquiry & research design: Choosing from five approaches* (2nd ed.). Thousand Oaks, CA: SAGE.
- Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Boston, MA: Pearson.
- Crook, C. (2008). Web 2.0 technologies for learning: The current landscape – opportunities, challenges and tensions. *Becta*. Retrieved from <http://webarchive.nationalarchives.gov.uk/20110130111510/http://www.becta.org.uk>
- Cuban, L. (1986). Introduction. In L. Cuban, *Teachers and machines: The classroom use of technology since 1920* (pp. 1-7). New York, NY: Teachers College Press. Retrieved from <http://books.Google.ca/books>
- Cuban, L. (2001). *Oversold and underused: Computers in the classroom*. Cambridge, MA: Harvard University Press.
- Cuban, L. (2012, March 14). Dilemmas in researching technology in schools (Part 2). [Blog post]. Retrieved from <http://larrycuban.wordpress.com/2012/03/14/dilemmas-in-researching-technology-in-schools-part-2/>

- Cuban, L., Kirkpatrick, H., & Peck, C. (2001). High access and low use of technologies in high school classrooms: Explaining an apparent paradox. *American Educational Research Journal*, 38(4), 813-834.
- Cucinelli, G. (2010). *Digital youth praxis and social justice*. (Unpublished doctoral dissertation, McGill University). Retrieved from digital.library.mcgill.ca
- Darke, P., Shanks, G., & Broadbetn, M. (1998). Successfully completing case study research: Combining rigour, relevance and pragmatism. *Information Systems Journal*, 8, 273-289.
- Deed, C., & Edwards, A. (2011). Unrestricted student blogging: Implications for active learning in a virtual text-based environment. *Active learning in higher education*, 12(1), 11-21. <http://dx.doi.org/10.1177/1469787410387725>
- Deng, L., & Yuen, A. H. K. (2011). Towards a framework for educational affordances of blogs. *Computers & Education*, 56, 441-451.
- Denzin, N. K., & Lincoln, Y. S. (2005). Introduction: The discipline and practice of qualitative research. In N. Denzin & Y. Lincoln (Eds.), *The SAGE handbook of qualitative research* (pp. 1-32). Thousand Oaks, CA: SAGE.
- Deresiewicz, W. (2011/2009). The end of solitude. In M. Bauerlein (Ed.), *The digital divide* (pp. 307-317). New York, NY: Jeremy P. Tarcher/Penguin.
- Derrick, W. (2008). Online social networks: Educational benefits and dangers. *Distance Learning*, 5(1), 43-47.
- De Souza-Hart, J. (2010). Biology blogs: An online journal club and assessment tool. *The American Biology Teacher*, 72(3), 149. <http://dx.doi.org/10.1525/abt.2010.72.3.H>

- Dewey, J. (1916). *Democracy and education: An introduction to the philosophy of education* [Project Gutenberg eBook]. Retrieved from <http://www.gutenberg.org>
- Dewing, M. (2010). *Social media: An introduction* (Publication No. 2010-03-E). Ottawa, ON: Library of Parliament.
- Dwyer, C., Hiltz, R., & Wildmeyer, G. (2008). Understanding development and usage of social networking sites: The social software performance model. *Proceedings of the 41st Hawaii International Conference on System Sciences*.
- Ertmer, P. A., & Ottenbreit-Leftwich, A. T. (2010). Teacher technology change: How knowledge, confidence, beliefs, and culture intersect. *Journal of Research on Technology in Education*, 42(3), 255-284.
- Fahser-Herro, D. C. (2010). Exploring student practices, teacher perspectives, and complex learning with Web 2.0 technologies: A socio-constructivist approach. (Doctoral dissertation). Retrieved from ProQuest. (Order No. 3424047)
- Feng, W., & Reeves, T. C. (2003). Why do teachers need to use technology in their classrooms? Issues, problems, and solutions. *Computers in the Schools*, 20(4), 49-65.
- Freire, P. (2009/1970). *Pedagogy of the oppressed* (30th anniv. ed.). New York, NY: Continuum.
- Friesen, N. (2010). Education and the social Web: Connective learning and the commercial imperative. *First Monday*, 15(6). Retrieved from firstmonday.org.
- Friesen, N., & Lowe, S. (2011). The questionable promise of social media for education: Connective learning and the commercial imperative. *Journal of Computer Assisted Learning*. Retrieved from onlinelibrary.wiley.com.

<http://dx.doi.org/10.1111/j.1365-2729.2011.00426.x>

Fullan, M. (2001). *The new meaning of educational change*. New York, NY: Teachers College Press.

Fullan, M. (2013). *Stratosphere: Integrating technology, pedagogy, and change knowledge*. Toronto, ON: Pearson Canada.

Garrison, M. J., & Bromley, H. (2004). Social contexts, defensive pedagogies, and the (mis)uses of educational technology. *Educational Policy*, 18(4), 589-613.

<http://dx.doi.org/10.1177/0895904804266643>

Gee, J. P. (2005). Semiotic social spaces and affinity spaces: From *The Age of Mythology* to today's schools. In D. Barton & K. Tusting (Eds.), *Beyond communities of practice: Language, power and social context* (pp. 214-232). New York, NY: Cambridge University Press.

Girod, M., & Cavanaugh, S. (2001, April). Technology as an agent of change in teacher practice. *THE Journal*. Retrieved from <http://thejournal.com>

Giroux, H. A. (2009). Critical theory and educational practice. In A. Darder, M. P. Baltodano, & R. D. Torres (Eds.), *The critical pedagogy reader* (pp. 27-51). New York, NY: Routledge.

Glassman, M., & Kang, M. J. (2011). The logic of wikis: The possibilities of the Web 2.0 classroom. *Computer-Supported Collaborative Learning*, 6, 93-112.

<http://dx.doi.org/10.1007/s11412-011-9107-y>.

Grant, L. (2006). Using wikis in schools: A case study. *FutureLab*. Retrieved from www.futurelab.org.uk

- Gray, C., & Smyth, K. (2011). Social not-working? Evaluating and building an online learning community. In P. Balcaen (Ed.), *Proceedings of the 6th International Conference on e-Learning*, (pp. 137-147). Kelowna, British Columbia: Academic Conferences International.
- Greenhow, C. (2009). Social scholarship: Applying social networking technologies to research practices. *Knowledge Quest*, 37(4), 42-47.
- Greenhow, C., Robelia, B., & Hughes, J. (2009). Learning, teaching, and scholarship in a digital age: Web 2.0 and classroom research: What path should we take now? *Educational Researcher*, 38, 246-259.
- <http://dx.doi.org/10.3102/0013189X09336671>
- Hamel, A. (2011). *From consumer to citizen: Digital media and youth civic engagement*. Ottawa, ON: Media Awareness Network.
- Harris, J., & Hofer, M. (2009). Instructional planning activity types as vehicles for curriculum-based TPACK development. In C. D. Maddux, (Ed.). *Research highlights in technology and teacher education 2009* (pp. 99-108). Chesapeake, VA: Society for Information Technology in Teacher Education (SITE).
- Harris, J., & Hofer, M. (2011). Technological pedagogical content knowledge (TPACK) in action: A descriptive study of secondary teachers' curriculum-based, technology-related instructional planning. *Journal of Research on Technology in Education*, 43(3), 211-229.
- Heath, A. W. (1997). The proposal in qualitative research. *The Qualitative Report*, 3(1).
- Retrieved from <http://www.nova.edu/ssss/QR>

- Heid, S., Fischer, T., & Kugemann, W.F. (2009). *Good practices for learning 2.0: Promoting innovation*. Seville, Spain: European Commission, Joint Research Centre. Retrieved from <http://ipts.jrc.ec.europa.eu/>
- Heidegger, M. (1977). *The question concerning technology*. Retrieved from <http://www.wright.edu/cola/Dept/PHL/Class/P.Internet/PITexts/QCT.html>
- Hendler, J. (2009). Web 3.0 emerging. *Computer*, 42(1), 111-113.
- Hermans, R., Tondeur, J., van Braake, J., & Valcke, M. (2008). The impact of school teachers' educational beliefs on the classroom use of computers. *Computers & Education*, 51, 1499-1509.
- Hernandez-Serrano, M. J. (2011). Progressing the social dimension toward the collaborative construction of knowledge in 2.0 learning environments: A pedagogical approach. In B. White, I. King, & P. Tsang (Eds.), *Social media tools and platforms in learning environments* (pp. 289-310). New York, NY: Springer.
- Hlynka, D. (2009). Looking ahead, looking backward: "Just do it." *Educational Technology*, 49(2), 50-52.
- Hlynka, D., & Belland, J. (1991). Introduction: Critical study of educational technology. In D. Hlynka & J. Belland (Eds.) *Paradigms regained* (pp. 5-20). Englewood Cliffs, NJ: Educational Technology.
- Hogan, B., & Quan-Haase, A. (2010). Persistence and change in social media. *Bulletin of Science Technology & Society*, 30(5), 309-315.
<http://dx.doi.org/10.1177/0270467610380012>
- Hughes, J. E., Guion, J. M., Bruce, K. A., Horton, L. R., & Prescott, A. (2011). A framework for action: Intervening to increase adoption of transformative Web 2.0

- learning resources. *Educational Technology*, 51(2), 53-61.
- Husserl, E. (1964). *The idea of phenomenology* (W. P. Alston & G. Nakhtnikian, Trans.). The Hague: Martinus Nijhoff. (Original work published 1950)
- Ito, M., Gutiérrez, K., Livingstone, S., Penuel, B., Rhodes, J., Salen, K., . . . Watkins, S. C. (2013). *Connected learning: An agenda for research and design*. Irvine, CA: Digital Media and Learning Research Hub. Retrieved from www.dmlhub.net/publication
- Jacobs, H. H. (Ed.) (2011). *Curriculum 21: Essential education for a changing world*. Alexandria, VA: ASCD.
- Jonassen, D. H., & Carr, C. S. (2000). Mindtools: Affordable multiple knowledge representations for learning. In S. Lajoie (Ed.), *Computers as cognitive tools, volume 2: No more walls* (pp. 165-195). Mahwah, NJ: Lawrence Erlbaum Associates
- Jonassen, D. H., Carr, C., & Yueh, H. (1998). Computers as mindtools for engaging learners in critical thinking. *TechTrends*, 43(2), 24-32
- Johnson, L., Adams, S., & Haywood, K. (2011). *The NMC Horizon Report: 2011 K-12 Edition*. Austin, TX: The New Media Consortium.
- Judson, E. (2006). How teachers integrate technology and their beliefs about learning: Is there a connection? *Journal of Technology and Teacher Education*, 14, 581-597.
- Kahn, R., & Kellner, D. (2007). Paulo Friere and Ivan Illich: Technology, politics and the reconstruction of education. *Policy Futures in Education*, 5(4), 431-448.
<http://dx.doi.org/10.2304/pfie.2007.5.4.431>

- Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of social media. *Business Horizons*, 53(1), 59-68.
doi:10.1016/j.bushor.2009.09.003
- Kedzie, C. (with Aragon, J.) (2002). Coincident revolutions and the dictator's dilemma: Thoughts on communication and democratization. In J. Allison (Ed.), *Technology, development, and democracy: International conflict and cooperation in the information age* (pp 105-130). New York, NY: State University of New York Press.
- Kelso, K. (2011). Digital teaching and professional development [Special report]. *Converge*, 2(1).
- Kendall, L. (2008). The conduct of qualitative interviews: Research questions, methodological issues, and researching online. In J. Coiro, M. Knobel, C. Lankshear, & D. Leu (Eds.), *Handbook of research on new literacies* (pp. 103-132). Mahwah, NJ: Routledge.
- Kim, B. (2001). Social constructivism. In M. Orey (Ed.), *Emerging perspectives on learning, teaching, and technology*. Retrieved from <http://projects.coe.uga.edu/epltt/>
- Kincheloe, J. L. (2005). *Critical constructivism*. New York, NY: Peter Lang.
- King, K. P. (2002). Educational technology professional development as transformative learning opportunities. *Computers & Education*, 39, 283-297.
- King, K. P. (2009). *Handbook of the evolving research of transformative learning* (10th anniv. ed.). Charlotte, NC: Information Age.
- King, K. P. (2011). Teaching in an age of transformation: Understanding unique

instructional technology choices which transformative learning affords.

Educational Technology, 51(2), 4-10.

Kitchenham, A. (2006). Teachers and technology: A transformative journey. *Journal of Transformative Education*, 4(3), 202-225.

Kitchenham, A. (2010). School cultures, teachers, and technology transformation.

Canadian Journal of Learning and Technology, 35(2). Retrieved from

<http://www.cjlt.ca/index.php/cjlt/article/view/523/256>

Koro-Ljungberg, M., Yendel-Hoppey, D., Smith, J., & Hayes, S. (2009).

(E)pistimological awareness, instantiation, of methods, and uninformed methodological ambiguity in qualitative research projects, *Educational Researcher*, 38(9), 687-699. <http://dx.doi.org/10.3102/0013189X0935190>

Kozma, R. (1991). Learning with media. *Review of Educational Research*, 61(2), 179-212.

Kozma, R. (1994). The influence of media on learning: The debate continues. *School Library Media Quarterly*, 22(4). Retrieved from <http://www.ala.org>

Lamb, G., & Groom, J. (2010). Never mind the edupunks; or, the great Web 2.0 swindle. *Educause Review*, 45(4), 50-58.

Lapham, L. H. (1994). Introduction to the MIT Press edition. In M. McLuhan, *Understanding media* (pp. ix-xxiii). Cambridge, MA: MIT Press.

Lather, P. (1991). *Getting smart: Feminist research and pedagogy with/in the postmodern*. New York, NY: Routledge.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. New York, NY: Cambridge University Press.

- Lee, L. (2010). Fostering reflective writing and interactive exchange through blogging in an advanced language course. *ReCALL*, 22(2): 212–227.
<http://dx.doi.org/10.1017/S095834401000008X>
- Lei, J., Conway, P., & Zhao, Y. (2008). *The digital pencil: One-to-one computing for children*. New York, NY: Lawrence Erlbaum Associates.
- LeVasseur, J. (2003). The problem of bracketing in phenomenology. *Qualitative Health Research*, 13(3), 408-420. <http://dx.doi.org/10.1177/104973230225033>
- Levinson, P. (1999). *Digital McLuhan*. New York, NY: Routledge.
- Lieberman, A., & Mace, D. (2009). Making practice public: Teacher learning in the 21st century. *Journal of Teacher Education*, 61(1-2), 77-88.
<http://dx.doi.org/10.1177/0022487109347319>
- Livingstone, S., Van Couvering, E., & Thumim, N. (2008). Converging traditions of research on media and information literacies. In J. Coiro, M. Knobel, C. Lankshear, & D. Leu (Eds.), *Handbook of research on new literacies* (pp. 103-132). Mahwah, NJ: Routledge.
- Manitoba Association of School Superintendents, and Manitoba Association of School Trustees. (2006). *Rural education in Manitoba: Defining challenges, creating solutions*. Retrieved May 12, 2012 from www.mass.mb.ca
- Manitoba Education. (n.d.). *Mandate, mission, vision, overarching goals, and priority action areas*. Winnipeg, MB: Author. Retrieved from www.edu.gov.mb.ca/edu/mandate.
- Manitoba Education Citizenship and Youth. (2008). *Literacy with ICT across the curriculum*. Winnipeg, MB: Author.

Manitoba Education Citizenship and Youth. (2008). *Literacy with ICT is for me!*

Winnipeg, MB: Author.

McCaffrey, G., Raffin-Bouchal, S., & Moules, N. (2012). Hermeneutics as research approach: A reappraisal. *International Journal of Qualitative Methods*, 11(3), 214-229.

McCain, T., & Jukes, I. (2001). *Windows on the future: Education in the age of technology*. Thousand Oaks, CA: Corwin Press.

McCormick, R. (2004). Collaboration: The challenge of ICT. *International Journal of Technology and Design Education*, 14, 159-176.

McLuhan, M. (1994). *Understanding media: The extensions of man*. Cambridge, MA: MIT Press. (Original work published 1964).

McLuhan, M., & Fiore, Q. (1968). *War and peace in the global village*. New York, NY: Bantam Books.

McLuhan, M., & McLuhan, E. (1988). *Laws of media: The new science*. Toronto, ON: University of Toronto Press.

Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation*. San Francisco, CA: Jossey-Bass.

Merriam, S. B., Cafferella, R. S., & Baumgartner, L. M. (2007). *Learning in adulthood: A comprehensive guide*. San Francisco, CA: Jossey-Bass.

Mezirow, J. (1991). *Transformative dimensions of adult learning*. San Francisco, CA: Jossey-Bass.

Mezirow, J. (1994). Understanding transformation theory. *Adult Education Quarterly*, 44(4), 222-232.

- Mezirow, J. (2000). Learning to think like an adult: Core concepts of transformation theory. In J. Mezirow (Ed.) *Learning as transformation* (pp. 3-33). San Francisco, CA: Jossey-Bass.
- Miller, R. D. (2009). Developing 21st century skills through the use of student personal networks. (Doctoral dissertation). Retrieved from ProQuest. (UMI No. 3383118)
- Minocha, S. (2009). Role of social software tools in education: A literature review. *Education & Training*, 51(5/6), 353-369.
<http://dx.doi.org/10.1108/00400910910987174>
- Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers College Record*, 108, 1017-1054.
- Moayeri, M. (2010). Classroom uses of social network sites: Traditional practices or new literacies? *Digital Culture & Education*, 2(1), 25-43.
- Noblitt, G., Flores, S., & Murillo, E. (2004). Postcritical ethnography: An introduction. In G. Noblitt, S. Flores, & E. Murillo (Eds.), *Postcritical ethnography: Reinscribing critique* (pp. 1 -52). Creskill, NJ: Hampton Press.
- Oppenheimer, T. (1997). The computer delusion. *The Atlantic Monthly*, 280(1). Retrieved from <http://www.theatlantic.com/past/docs/issues/97jul/index.htm>
- Ottenbreit-Leftowich, A. T., GLazewski, K. D., Newby, T. J., & Ertmer, P. A. (2010). Teacher value beliefs associated with using technology: Addressing professional and student needs. *Computers & Education*, 55, 1321-1335.
<http://dx.doi.org/10.1016/j.compedu.2010.06.002>
- Overbay, A., Patterson, A. S., Vasu, E. S., & Grable, L. L. (2010). Constructivism and technology use: Findings from the IMPACTing leadership project. *Educational*

Media International, 47(2), 103-120.

<http://dx.doi.org/10.1080/09523987.2010.492675>

Palfrey, J., & Gasser, U. (2008). *Born digital: Understanding the first generation of digital natives*. New York, NY: Basic Books.

Pan, S. (2010). The relationship between teachers' self-efficacy and the integration of Web 2.0 tools. (Doctoral dissertation). Retrieved from ProQuest. (UMI No. 3423505)

Papert, S. (2005). Teaching children to think. *Contemporary Issues in Technology and Teacher Education*, 5(3/4), 353-365. (Originally published in *The Computer in School: Tutor, Tool, Tutee*, 1980)

Pifarre, M., & Staarman, J. K. (2011). Wiki-supported collaborative learning in primary education: How a dialogic space is created for thinking together. *Computer-Supported Collaborative Learning*, 6, 187-205. <http://dx.doi.org/10.1007/s11412-011-9116-x>

Plowright, D. (2011). *Using mixed methods: Frameworks for an integrated methodology*. Los Angeles, CA: SAGE.

Policy Horizons Canada. (2011, December). *Governing by wiki: Fast, flat, and furious social media foresight study*. Ottawa, ON: Government of Canada. Retrieved from <http://www.horizons.gc.ca/>

Polly, D. (2007). Blogs: Turning technology-driven social fads into an educational tool. *Virginia Society for Technology in Education Journal*, 21(4), 1-6. Retrieved from www.vste.org.

Postman, N. (1995). *The end of education: Redefining the value of school*. New York,

NY: Vintage Books.

Postman, N. (1998). *Five things we need to know about technological change* [Speech transcript]. Retrieved April 15, 2012 from

<https://www.student.cs.uwaterloo.ca/~cs492/papers/neil-postman--five-things.html>

Poutiatine, M. I. (2009). What is transformation? Nine principles toward the understanding of the transformational process for transformational leadership.

Journal of Transformative Education, 7(3), 189-208.

Powers, W. (2010). *Hamlet's blackberry*. New York, NY: HarperCollins.

Prensky, M. (2011/2001). Digital natives, digital immigrants. In M. Bauerlein (Ed.), *The digital divide* (pp. 3-11). New York, NY: Jeremy P. Tarcher/Penguin.

Prensky, M. (2009). Let's be "digital multipliers." *Educational Technology*, 49(1), 64.

Rainie, L. (2013). Internet adoption becomes nearly universal among some age groups, but others lag behind. *PEW Research Center*. Retrieved from

<http://www.pewresearch.org/fact-tank/2013/05/30/internet-adoption-becomes-nearly-universal-among-some-groups-but-others-lag-behind/>

Rainie, L, Purcell, K., & Smith, A. (2011). The social side of the Internet. *PEW Internet and American Life Project*. Retrieved from

<http://www.pewinternet.org/Reports/2011/The-Social-Side-of-the-Internet.asp>

Rakes, G. C., Fields, V. S., & Cox, K. E. (2006). The influence of teachers' technology use on instructional practices. *Journal of Research on Technology in Education*, 38(4), 409-424.

- Rambe, P. (2011). Social media as “disruptive technologies”: Negotiation of power and social learning in Facebook postings. *Proceedings of the 6th International Conference on e-Learning*. Reading, England: Academic.
- Ray, J., Kalvaitis, D., Wheeler, C. & Hirtle, J. (2011). Teachers' attitudes, behaviors, and opinions related to social media use. In *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2011* (pp. 861-867). Chesapeake, VA: AACE. Retrieved from <http://www.editlib.org/p/38818>
- Razmerita, L., Kirchner, K., & Sudzina, F. (2009). Personal knowledge management: The role of Web 2.0 tools for managing knowledge at individual and organizational levels. *Online Information Review*, 33(6), 1021-1039.
<http://dx.doi.org/10.1108/14684520911010981>
- Rheingold, H. (2002). *Smart mobs: The next social revolution*. Cambridge, MA: Basic Books.
- Rheingold, H. (2008). Using social media to teach social media. *The New England Journal of Higher Education*, 23(1), 25-26.
- Rheingold, H. (2010). Attention, and other 21st-century social media literacies. *Educause Review*, 45(5), 14-24.
- Rheingold, H. (2012). *Net smart: How to thrive online*. Cambridge, MA: MIT Press.
- Redecker, C., Ala-Mutka, K., Bacigalpo, M., Ferrari, A., & Punie, Y. (2009). *Learning 2.0: The impact of Web 2.0 innovations on education and training in Europe*. Seville, Spain: Institute for Prospective Technological Studies. Retrieved from <http://ipts.jrc.ec.europa.eu/publications/pub.cfm?id=2899>

- Richardson, W. (2009). Becoming network-wise. *Educational Leadership*, 66(6), 26-31.
- Rodino-Colocino, M. (2006). Laboring under the digital divide. *New Media Society*, 8(3), 487-511.
- Rogers, P. C. (2011). Shaping global citizens: Technology enhanced intercultural collaboration and transformation. *Educational Technology*, 51(2), 47-52.
- Rogoff, B. (2003). *The cultural nature of human development*. New York, NY: Oxford University Press.
- Rosin, L. D., Carrier, L. M., & Cheever, N. A. (2013). Facebook and texting made me do it: Media-induced task-switching while studying. *Computers in Human Behavior*, 29, 948-958. <http://dx.doi.org/10.1016/j.chb.2012.12.001>
- Ross, J. (2012). Just what is being reflected in online reflection? New literacies for new media learning practices. In L. Dirckinck-Holmfeld, V. Hodgson, & D. McConnell (Eds.), *Exploring the theory, pedagogy and practice of networked learning* (pp. 191-207). New York, NY: Springer.
- Ryan, G. W., & Bernard, H. R. (2003). Techniques to identify themes. *Field Methods*, 15(1), 85-109. <http://dx.doi.org/10.1177/1525822X0223956>
- Sade-Beck, L. (2004). Internet ethnography: Online and offline. *International Journal of Qualitative Methods*, 3(2), 45-51.
- Saldana, J. (2013). *The Coding Manual for Qualitative Researchers*. Los Angeles, CA: SAGE.
- Sallai, G. (2012). Defining infocommunications and related terms. *Acta Polytechnica Hungarica*, 9(6), 5-15.

- Sana, F., Weston, T., & Cepeda, N. J. (2013). Laptop multitasking hinders classroom learning for both users and nearby peers. *Computers & Education*, 62, 24-31.
<http://dx.doi.org/10.1016/j.compedu.2012.10.00>
- Schrum, L., Thompson, A., Maddux, C., Sprague, D., Bull, G., & Bell, L. (2007). Editorial: Research on the effectiveness of technology in schools: The roles of pedagogy and content. *Contemporary Issues in Technology and Teacher Education*, 7(1), 456-460.
- Schneider, J. (2011). Questioning our mania for education technology. *Education Week*, 31(6), 24.
- Schuck, S., Aubusson, P., & Kearney, M. (2010). Web 2.0 in the classroom? Dilemmas and opportunities inherent in adolescent web 2.0 engagement. *Contemporary Issues in Technology and Teacher Education*, 10(2), 234-246.
- Schuster, M. (2013). Hermeneutics as embodied existence. *International Journal of Qualitative Methods*, 12, 194-206. Retrieved from
<http://ejournals.library.ualberta.ca/index.php/IJQM/index>
- Selwyn, N. (2004). Reconsidering political and popular understandings of the digital divide. *New Media Society*, 6(3), 341-362.
- Selwyn, N. (2012). Ten suggestions for improving academic research in education and technology. *Learning, Media and Technology* (1-7).
<http://dx.doi.org/1.10.1080/17439884.2012.680213>
- Selwyn, N. (2014). *Distrusting educational technology: Critical questions for changing times*. New York, NY: Routledge.
- Shiang-Kwei, W., & Hui-Yin, H. (2008). Reflections on using blogs to expand in-class

- discussion. *TechTrends: Linking Research & Practice to Improve Learning*, 52(3), 81-85. <http://dx.doi.org/10.1007/s11528-008-0160-y>
- Shirky, C. (2010). *Cognitive surplus*. New York, NY: Penguin.
- Small, G., & Vorgan, G. (2011/2008). Your brain is evolving right now. In M. Bauerlein (Ed.), *The digital divide* (pp. 76-96). New York, NY: Jeremy P. Tarcher/Penguin.
- Stake, R. E. (2005). Qualitative case studies. In N. Denzin & Y. Lincoln (Eds.), *The SAGE handbook of qualitative research* (pp. 443-466). Thousand Oaks, CA: SAGE.
- Steinman D.C. (2010). Social interactions within a Web 2.0 learning environment: The impact on learner social presence. (Doctoral dissertation). Retrieved from ProQuest. (UMI No. 3447373)
- Sutherland, R., Armstrong, V., Barnes, S., Brawn, R., Breeze, N., Gall, M., . . . John, P. (2011). Transforming teaching and learning: Embedding ICT into everyday classroom practices. *Journal of Computer Assisted Learning*, 20, 413-425.
- Tang, L. (2010). Learning with large-scale social media networks. (Doctoral dissertation). Retrieved from ProQuest. (UMI No. 3425805)
- Tapscott, D. (2009). *Grown up digital*. New York, NY: McGraw-Hill.
- Taylor, E. W. (2007). An update of transformative learning theory: A critical review of the empirical research (1999–2005). *International Journal of Lifelong Education*, 26(2), 173-191.
- Taylor, E. W. (2008). Transformative learning theory. *New Directions for Adult and Continuing Education*, 119, 5-15.
- Theall, D. (1971). *The medium is the rear view mirror*. Montreal, QC: McGill-Queen's

University Press.

- Thompson, T. L. (2012). Who's taming who? Tensions between people and technologies in cyberspace communities. In L. Dirckinck-Holmfeld, V. Hodgson, & McConnell (Eds.), *Exploring the theory, pedagogy and practice of networked learning* (pp. 157-172). New York, NY: Springer.
- Tufford, L., & Newman, P. (2012). Bracketing in qualitative research. *Qualitative social work*, 11(1), 80-96. <http://dx.doi.org/10.1177/1473325010368316>
- Turkle, S. (2011). *Alone together: Why we expect more from technology and less from each other*. New York, NY: Basic Books.
- Van Heertum, R. (2005). How objective is objectivity? A critique of current trends in educational research. *Interactions: UCLA Journal of Education and Information Studies*, 1(2), 1-19. Retrieved from <http://escholarship.org/uc/item/68p612xh>
- Varisco, D. (2007). Virtual Dasein: Ethnography in cyberspace. *Online Journal of the Virtual Middle-East*, 2(1). Retrieved from www.cyberorient.net/article.do?articleId=3698
- Veletsianos, G. (2010). A definition of emerging technologies for education. In G. Veletsianos (Ed.), *Emerging technologies in distance education* (pp. 3-22). Edmonton, AB: Athabasca University Press.
- Veletsianos, G. (2011). Designing opportunities for transformation with emerging technologies. *Educational Technology*, 51(2), 41-46.
- Vygotsky, L. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press. (Originally published in Russian in 1934)

- Wallin, D. C. (2006, June). Educational priorities and capacity: A summary of research on rural education in Manitoba. *MASS Brief*. Retrieved from www.mbschoolboards.ca
- Wallin, D. C. (2009). *Rural education: A review of provincial and territorial initiatives, 2009*. Winnipeg, MB: Government of Manitoba (Education Training and Youth).
- Wang, S., & Hsua, H. (2008). Reflections on using blogs to expand in-class discussion. *TechTrends*, 52(3), 81-85.
- Warschauer, M. (2003). *Technology and social inclusion: Rethinking the digital divide*. Cambridge, MA: MIT Press.
- Weaver, J., & Grindall, K. (1998). Surfing and getting wired in a fifth grade classroom: Critical pedagogical methods and techno-culture. In J. Kincheloe & S. Steinberg (Eds.), *Unauthorized methods: Strategies for critical teaching* (pp 231-251). New York, NY: Routledge.
- Weinberger, D. (2011). *Too big to know*. New York, NY: Basic Books.
- Wenger, E., White, N., & Smith, J. D. (2009). *Digital habitats: Stewarding technology for communities*. Portland, OR: CPsquare.
- Willis, J. W. (2007). *Foundations of qualitative research: Interpretive and critical approaches*. Thousand Oaks, CA: SAGE.
- Willis, J. W. (2008). *Qualitative research methods in education and educational technology*. Charlotte, NC: Information Age.
- Windschitl, M. (1998). The www and classroom research: What path should we take? *Educational Researcher*, 27(1), 28-33.
- White, G. (2011, November 30). Research review: Social networking and learning [Web

log post]. Retrieved from <http://dern.org.au/index.php/comment/social-networking-and-learning>

Wylie, S., & Marri, A. R. (2010). Teledeliberative democratic discourse: A case study of high school students' use of Web 2.0. *Campus Wide Information Systems*, 27(4), 193-209.

Yin, R. K. (2009). *Case study research: Design and methods*. Thousand Oaks, CA: SAGE.

Appendix A: Letter and Consent Form for Superintendent**UNIVERSITY
OF MANITOBA****Faculty of Education**

August 30, 2012

Dear Mr. _____:

My name is Michael Nantais, and I am a doctoral candidate at the Faculty of Education at the University of Manitoba and an Assistant Professor at the Faculty of Education at Brandon University. I am writing to ask your permission to invite select teachers within your school division to participate in a dissertation research study. With your permission, I would like to proceed by contacting the Principals ----- and ----- Schools and seek their consent to approach grade 7-12 teachers in their school as potential participants. My study is titled ***Teaching Using Social Media: A Multiple Case Study Approach*** and its purpose is to examine how some classroom teachers make use of social media for teaching and to determine if, and how, this changes their pedagogical practice.

Participating in this study would not require any interruption of regular duties of the teacher. Participants (teachers) will be expected to:

1. Participate in a series of short, digitally audio recorded interviews approximately every 3 weeks throughout the 5 month study, at a time and place convenient to the participant.
2. Spend approximately 20 minutes every 3 weeks reviewing the interview transcripts.
3. Provide copies of relevant teaching documents, such as course outlines and assignments.
4. If they are willing, allow the use of their professional social media interactions as data (e.g. twitter, or a blog).

No information about students will be used in the data. Participants will be asked to not mention specific students or their work in interviews. Any inadvertent disclosures will be deleted from transcripts and not used. Additionally such disclosures will remain confidential.

I hope you will grant permission for teachers to participate in this study; there is a need for research in the use of this emerging technology, especially from the teacher's

perspective. In addition, the ongoing, reflective nature of the interviews would be a benefit to the participant. Information about the research follows.

Research Project Title: Teaching Using Social Media: A Multiple Case Study Approach

Researcher: Michael Nantais, Brandon University (204-727-9619 or umnantm@cc.umanitoba.ca or nantaism@brandonu.ca)

Advisor: Dr. Orest Cap, University of Manitoba (204-474-9073 or Orest.Cap@ad.umanitoba.ca)

Risks and Benefits

The risks in this study are minimal, if any. There may be a chance that reflecting on practice could be uncomfortable for participants, however, usually such critical reflection is considered a benefit. A benefit, in addition to the altruistic one of participating in the advancement of knowledge, is the opportunity to discuss and reflect critically on practice in a non-threatening situation.

Anonymity

The identity of all participants and the location of the research will be protected through the use of pseudonyms; neither individual names nor school or school division names will appear in the results. Participants will be asked to sign a consent form that will indicate the interviews will be audio recorded, and that participants may answer only those questions with which they feel comfortable. Participants may withdraw from the study at any time by contacting me, at which time their data will be destroyed.

Participants will also have the opportunity to review the transcripts from the semi-structured interviews in order to add, delete, or change responses and to ensure that all identifying information has been anonymized.

During the research, access to the materials will be limited to me, potentially my advisor, and possibly, a transcriber for the audio-recorded interviews. The transcriber, if one is used, will be required to sign a confidentiality agreement and participants will also be informed on the consent form that a transcription service may be used.

Dissemination

Within three months of the conclusion of data collection, a summary report of the research will be distributed to the participants via paper or electronic means. The final report will also be shared in the form of a dissertation and possibly scholarly publications and/or conference presentations, which are intended to contribute to the knowledge base about the use of social media for education.

Should you provide me with permission to speak with these principals and teachers, please sign the consent that is attached to this letter and return it to me at the contact address provided. If you have any questions about this request, please contact me. If you do not wish teachers within your school division to participate, please discard this information.

Sincerely,

Michael Nantais
Ph.D. Candidate, University of Manitoba
Assistant Professor, Faculty of Education, Brandon University
270-18th Street
Brandon, MB R7A 6A9
Tel: (204) 727-9619
E-mail: nantaism@brandonu.ca

This research has been approved by the Education/Nursing Research Ethics Board at the University of Manitoba, and the Brandon University Research Ethics Committee. If there are any concerns or complaints about this project contact any of the above-named persons or the Human Ethics Secretariat at the University of Manitoba: phone 204-474-7122 or email margaret_bowman@umanitoba.ca or the Brandon University Research Office: phone 204-727-7445 or email burec@brandonu.ca.

Superintendent's Consent

I, _____, hereby give permission for *Michael Nantais* to contact the Principals of ----- School and ----- School for consent to approach teachers in these schools to participate in the research study entitled, *Teaching Using Social Media: A Multiple Case Study Approach* to be conducted during the 2012/2013 school year.

By signing this permission form, I consent that I understand the following:

- The researcher will be individually interviewing and digitally audio recording teachers at a time and place convenient to the participant as a means of data collection.
- The researcher will be collecting various relevant documents, including public documents, such as school plans, and teacher documents, such as course outlines, and activities, as a means of data collection.
- Participation in this study will not interfere with the regular duties of the participant.
- No information about students will be used in the data. Participants will be asked to not mention specific students or their work in interviews. Any inadvertent disclosures will be deleted from transcripts and not used. Additionally such disclosures will remain confidential.
- I will not disclose the identity of any teachers participating in the study, if they become known to me.
- There will be no repercussions for individual teachers who consent to participate, or decline to participate, in this study.

In no way does this letter or my signature waive my legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities.

Superintendent's Signature

Date

Appendix B: Letter and Consent Form for Principal

UNIVERSITY
OF MANITOBA

Faculty of Education

Date September 2012

Dear -----:

My name is Michael Nantais, and I am a doctoral candidate at the Faculty of Education at the University of Manitoba and an Assistant Professor at the Faculty of Education at Brandon University. I am writing to ask your permission to invite select teachers within your school to participate in a dissertation research study. I have already obtained consent from ----- to contact you for this purpose. With your permission, I would like to approach grade 7-12 teachers in your school to invite them to participate in this study. My study is titled ***Teaching Using Social Media: A Multiple Case Study Approach*** and its purpose is to examine how some classroom teachers make use of social media for teaching and to determine if, and how, this changes their pedagogical practice.

Participating in this study would not require any interruption of regular duties of the teacher. Participants (teachers) will be expected to:

1. Participate in a series of short, digitally audio recorded interviews approximately every 3 weeks throughout the 5 month study, at a time and place convenient to the participant.
2. Spend approximately 20 minutes every 3 weeks reviewing the interview transcripts.
3. Provide copies of relevant teaching documents, such as course outlines and assignments.
4. If they are willing, allow the use of their professional social media interactions as data (e.g. twitter, or a blog).

No information about students will be used in the data. Participants will be asked to not mention specific students or their work in interviews. Any inadvertent disclosures will be deleted from transcripts and not used. Additionally such disclosures will remain confidential.

I hope you will grant permission for teachers to participate in this study; there is a need for research in the use of this emerging technology, especially from the teacher's

perspective. In addition, the ongoing, reflective nature of the interviews would be a benefit to the participant. Further information about the research follows.

Research Project Title: Teaching Using Social Media: A Multiple Case Study Approach

Researcher: Michael Nantais, Brandon University (204-727-9619 or umnantm@cc.umanitoba.ca or nantaism@brandonu.ca)

Advisor: Dr. Orest Cap (204-474-9073 or Orest.Cap@ad.umanitoba.ca)

Risks and Benefits

The risks in this study are minimal, if any. There may be a chance that reflecting on practice could be uncomfortable for participants, however, usually such critical reflection is considered a benefit. A benefit, in addition to the altruistic one of participating in the advancement of knowledge, is the opportunity to discuss and reflect critically on practice in a non-threatening situation.

Anonymity

The identity of all participants and the location of the research will be protected through the use of pseudonyms; neither individual names nor school or school division names will appear in the results. Participants will be asked to sign a consent form that will indicate the interviews will be audio recorded, and that participants may answer only those questions with which they feel comfortable. Participants may withdraw from the study at any time by contacting me, at which time their data will be destroyed. Participants will also have the opportunity to review the transcripts from the semi-structured interviews in order to add, delete, or change responses and to ensure that all identifying information has been anonymized.

During the research, access to the materials will be limited to me, potentially my advisor, and possibly, a transcriber for the audio-recorded interviews. The transcriber, if one is used, will be required to sign a confidentiality agreement and participants will also be informed on the consent form that a transcription service may be used.

Dissemination

Within three months of the conclusion of data collection, a summary report of the research will be distributed to the participants via paper or electronic means. The final report will also be shared in the form of a dissertation and possibly scholarly publications and/or conference presentations, which are intended to contribute to the knowledge base about the use of social media for education.

Should you provide me with permission to speak with these teachers, please sign the consent that is attached to this letter and return it to me at the contact address provided. If you have any questions about this request, please contact me. If you do not wish teachers within your school division to participate, please discard this information.

Sincerely,

Michael Nantais
Ph.D. Candidate, University of Manitoba
Assistant Professor, Faculty of Education, Brandon University
270-18th Street
Brandon, MB R7A 6A9
Tel: (204) 727-9619
E-mail: nantaism@brandonu.ca

This research has been approved by the Education/Nursing Research Ethics Board at the University of Manitoba, and the Brandon University Research Ethics Committee. If there are any concerns or complaints about this project contact any of the above-named persons or the Human Ethics Secretariat at the University of Manitoba: phone 204-474-7122 or email margaret_bowman@umanitoba.ca or the Brandon University Research Office: phone 204-727-7445 or email burec@brandonu.ca.

Principal's Consent

I, _____, hereby give permission for *Michael Nantais* to approach Grade 7-12 teachers of ----- to invite them to participate in the research study entitled, *Teaching Using Social Media: A Multiple Case Study Approach* to be conducted during the 2012/2013 school year.

By signing this permission form, I consent that I understand the following:

- The researcher will be individually interviewing and digitally audio recording teachers at a time and place convenient to the participant as a means of data collection.
- The researcher will be collecting various relevant documents, including public documents, such as school plans, and teacher documents, such as course outlines, and activities, as a means of data collection.
- Participation in this study will not interfere with the regular teaching duties of the participant.
- No information about students will be used in the data. Participants will be asked to not mention specific students or their work in interviews. Any inadvertent disclosures will be deleted from transcripts and not used. Additionally such disclosures will remain confidential.
- I will not disclose the identity of any teachers participating in the study, if they become known to me.
- There will be no repercussions for individual teachers who consent to participate, or decline to participate, in this study.

In no way does this letter or my signature waive my legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities.

Principal's Signature

Date

Appendix C: Letter, Information Sheet, and Consent Form for Teacher**UNIVERSITY
OF MANITOBA****Faculty of Education**

Date

Dear grade 7 – 12 teacher:

My name is Michael Nantais, and I am a doctoral candidate at the Faculty of Education at the University of Manitoba and an Assistant Professor at the Faculty of Education at Brandon University. I am writing to invite you to participate in a dissertation research study. I have already obtained consent from [Superintendent's name] and [Principal's name] to contact you for this purpose. My study is titled ***Teaching Using Social Media: A Multiple Case Study Approach*** and its purpose is to examine how some classroom teachers make use of social media for teaching and to determine if, and how, this changes their pedagogical practice. Participants will be asked to share their experiences, procedures and reflections about their use of social media in their practice.

I am looking for 8-10 grade 7-12 teachers who are either beginning to make use of, or have been using, social media as part of their teaching practice. I also require that the teacher and his/her students have access to the necessary hardware, software and broadband connectivity to make use of these media. In addition, it is expected that participants will possess basic computer skills. If you are unsure whether you are using social media, some information is provided with this letter to help explain what would qualify for the purpose of this study.

No information about students will be used in the data. Participants will be asked to not mention specific students or their work in interviews. Any inadvertent disclosures will be deleted from transcripts and not used. Additionally such disclosures will remain confidential.

I hope you will consent to participate in this study; there is a need for research in the use of this emerging technology, especially from the teacher's perspective. In addition, the ongoing, reflective nature of the interviews would be a personal benefit. Further information about the research, including your rights as a participant, follows.

Research Project Title: Teaching Using Social Media: A Multiple Case Study Approach**Researcher & Contact Information:** Michael Nantais, Brandon University (204-727-9619 or umnantm@cc.umanitoba.ca or nantaism@brandonu.ca)

Research Supervisor & Contact Information: Dr. Orest Cap (204-474-9073
or Orest.Cap@ad.umanitoba.ca)

As previously stated, the purpose of this study is to examine how some classroom teachers make use of social media for teaching and to determine if, and how, this changes their pedagogical practice. Participants will be asked to share their experiences, procedures and reflections about their use of social media in their practice. The decision to participate or decline participation in this study is completely voluntary and you have the right to terminate your participation at any time without penalty. Additionally, you may opt out of any portion of the study or any questions you do not wish to answer. There is no compensation for participation.

Expectations of Participants

Participants will be expected to:

1. Participate in a series of short, digitally audio recorded interviews approximately every 3 weeks through the 5 month study, at a time and place convenient to the participant. Each interview session should take about 30 – 45 minutes.
2. Spend approximately 20 minutes every 3 weeks reviewing the interview transcripts.
3. Provide digital or paper copies of relevant teaching documents, such as course outlines and assignments.
4. If you use social media as a professional tool (e.g. twitter, a blog, or belong to a social network) you will be asked to allow the researcher to ‘follow’ you on these media and use these professional social media interactions as data for the study. Any third party comments or work, student or otherwise, will not be used in data and will be deleted or blacked out in any transcripts.

Risks and Benefits

The risks in this study are minimal, if any; there may be a chance that reflecting on practice could be uncomfortable for some participants. A benefit, in addition to the altruistic one of participating in the advancement of knowledge, is the opportunity to discuss and reflect critically on your practice in a non-threatening situation.

Anonymity & Confidentiality

The identity of all participants and the location of the research will be protected through the use of pseudonyms; neither individual names nor school or school division names will appear in the results. Direct quotes from interviews may be used in reporting the data, however, as previously mentioned, pseudonyms will be used. Participants will also be asked to not share the identity of other participants, if they know them.

Participants will also have the opportunity to review the transcripts from the semi-structured interviews in order to add, delete, or change responses and to ensure that all identifying information has been anonymized.

During the research, access to the materials will be limited to me, potentially to my advisor, and possibly, a transcriber for the audio-recorded interviews. The transcriber, if

one is used, will be required to sign a confidentiality agreement. All data will be stored in a secure location, and after three years, will be destroyed by shredding (paper) or securely deleting all digital files.

Participants may withdraw from the study at any time by contacting me, at which time their data will be destroyed.

Dissemination of Results

Within three months of the conclusion of data collection, a summary report of the research will be distributed to the participants via paper or electronic means, if indicated on the consent form. The final report will also be shared in the form of a dissertation and possibly scholarly publications and/or conference presentations, which are intended to contribute to the knowledge base about the use of social media for education.

If you are interested in participating, please contact me at (204) 727-9619 or via email at: nantaism@brandonu.ca, at which time I will give you a consent form and answer any questions you might have.

I reiterate that you are under no obligation to participate in this research. However, if you choose to do so, you will be free to raise questions or concerns with me, or ask for the benefit of my experience, at any time throughout the study. You may withdraw without penalty at any time, if you choose, and any data you have provided will be destroyed. Thank you for your consideration. Contact me at nantaism@brandonu.ca or (204) 727-9619 with any questions or concerns you might have. If you do not wish to participate, please discard this information.

Sincerely,

Michael Nantais
Ph.D. Candidate, University of Manitoba
Assistant Professor, Faculty of Education, Brandon University
270-18th Street
Brandon, MB R7A 6A9
Tel: (204) 727-9619
E-mail: nantaism@brandonu.ca

This research has been approved by the Education/Nursing Research Ethics Board at the University of Manitoba, and the Brandon University Research Ethics Committee. If there are any concerns or complaints about this project contact any of the above-named persons or the Human Ethics Secretariat at 474-7122, or email margaret_bowman@umanitoba.ca.

Information Sheet to accompany recruitment letter



UNIVERSITY
OF MANITOBA

Faculty of Education

Having trouble deciding if you meet the 'Social Media User' requirement?

Well, you are not alone! An exact definition of 'social media' is hard to find. For this study, you are a user of social media in the 'classroom' if you make use of *at least one* of these media in your teaching practice. The specific site is not the most important thing for this study, it is what these media allow the user to do.

So, what counts as a social medium? Most scholars agree on three points, they are, social media are;

- ☞ Internet based (specifically what is commonly called Web 2.0)
- ☞ Is based on user generated content, that is, the users themselves, are the content creators.
- ☞ Interaction is integral to these media. Interaction includes discussions, commenting, collaboration, tagging, and sharing.

Some examples are given below to illustrate, there are thousands of these sites, however, this list should give a sense of the range;

- ☞ Collaborative media: these enable joint, simultaneous content creation (e.g. wikis, Google docs)
- ☞ Blogs – often characterized as online journals.
- ☞ Microblogging – short messages, users can 'follow' others (e.g. Twitter)
- ☞ Media sharing: sharing & commenting on media, including photographs, video, etc. (e.g. YouTube, Flickr, Slideshare, Picasa)
- ☞ Social Networks: communities where users create profiles, connects with others, build friendships (e.g. Facebook, Ning networks, Edmodo)
- ☞ Social bookmarking: sharing bookmarks, comments, tagging (e.g. Diigo, Delicious)
- ☞ Social news: allow users to share news, commenting and tagging (e.g. Digg)
- ☞ Virtual worlds & games: these are dimensional worlds in the form of a game or virtual community (e.g. Second Life, World of Warcraft)

Please contact me at nantaism@brandonu.ca or (204) 727-9619 for any clarification or with any questions you might have.

Research Project Title: Teaching Using Social Media: A Multiple Case Study Approach

Researcher: Michael Nantais, Brandon University (204-727-9619 or umnantm@cc.umanitoba.ca or nantaism@brandonu.ca)

Advisor: Dr. Orest Cap, University of Manitoba (204-474-9073
or Orest.Cap@ad.umanitoba.ca)

This research has been approved by the Education/Nursing Research Ethics Board at the University of Manitoba, and the Brandon University Research Ethics Committee. If there are any concerns or complaints about this project contact any of the above-named persons or the Human Ethics Secretariat at 474-7122, or email margaret_bowman@umanitoba.ca



UNIVERSITY
OF MANITOBA

Faculty of Education

Participant Consent Form

Research Project Title: Teaching Using Social Media: A Multiple Case Study Approach

Researcher & Contact Information: Michael Nantais, Brandon University (204-727-9619 or umnantm@cc.umanitoba.ca or nantaism@brandonu.ca)

Research Supervisor & Contact Information: Dr. Orest Cap (204-474-9073 or Orest.Cap@ad.umanitoba.ca)

This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

Purpose of the Research & Commitment

The purpose of this study is to examine how some classroom teachers make use of social media for teaching and to determine if, and how, this changes their pedagogical practice. Participants will be asked to share their experiences, procedures and reflections about their use of social media in their practice over a series of short interview sessions over the 5 months of the study. Using a series of interviews will allow deep reflection and discussions of evolving practice.

Participating in this study means that you consent to;

1. Participate in a series of short, digitally audio recorded interviews approximately every 3 weeks through the 5 month study, at a time and place convenient to the participant. Each interview session should take about 30 – 45 minutes.
2. Spend approximately 20 minutes every 3 weeks reviewing the interview transcripts.
3. Provide digital or paper copies of relevant teaching documents, such as course outlines and assignments.
4. If you use social media as a professional tool (e.g. twitter, a blog, or belong to a social network) you will be asked to allow the researcher to ‘follow’ you on these media and use these professional social media interactions as data for the study. Any third party comments or work, student or otherwise, will not be used in data and will be deleted or blacked out in any transcripts.
5. Keep knowledge, if any, of other participant’s identity confidential.

Feedback/Debriefing

Interviews will be digitally audio-recorded and transcribed. You will have the opportunity to review the transcripts from the semi-structured interviews in order to add, delete, or change responses and to ensure that all identifying information has been anonymized. It is anticipated that it will take you approximately 20 minutes to review each transcript. You will have two weeks to review the transcripts, and then the researcher will continue with the analysis. A non-response from you will be assumed to be approval of the transcript.

Given the ongoing nature of the research, opportunities to validate the data will be provided at each interview session, in the form of collaborative analysis.

Risks and Benefits

The risks in this study are minimal, if any; there may be a chance that reflecting on practice could be uncomfortable for some participants. A benefit, in addition to the altruistic one of participating in the advancement of knowledge, is the opportunity to discuss and reflect critically on your practice in a non-threatening situation.

Anonymity & Confidentiality

The identity of all participants and the location of the research will be protected through the use of pseudonyms; neither individual names nor school or school division names will appear in the results. Direct quotes from interviews may be used in reporting the data, however, as previously mentioned pseudonyms will be used. Participants are asked to not share the identity of other participants, if they are known to them.

No information about students will be used in the data. Participants will be asked to not mention specific students or their work in interviews. Any inadvertent disclosures will be deleted from transcripts and not used. Additionally such disclosures will remain confidential.

During the research, access to the materials will be limited to me, potentially to my advisor, and possibly, a transcriber for the audio-recorded interviews. The transcriber, if one is used, will be required to sign a confidentiality agreement. All data will be stored in a secure location, and after three years, will be destroyed by shredding (paper) or securely deleting all digital files.

Participants may withdraw from the study at any time by contacting me, at which time their data will be destroyed.

Dissemination

Within three months of the conclusion of data collection, a summary report of the research will be distributed to the participants via paper or electronic means, if indicated on the consent form. The final report will also be shared in the form of a dissertation and possibly scholarly publications and/or conference presentations, which are intended to contribute to the knowledge base about the use of social media for education.

Deception

No forms of deception will be used in this study.

Compensation

No forms of compensation will be used in this study.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and /or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

The University of Manitoba may look at your research records to see that the research is being done in a safe and proper way.

This research has been approved by the Education/Nursing Research Ethics Board at the University of Manitoba, and the Brandon University Research Ethics Committee. If there are any concerns or complaints about this project contact any of the above-named persons or the Human Ethics Secretariat at 474-7122, or email margaret_bowman@umanitoba.ca.

A copy of this consent form has been given to you to keep for your records and reference.

Participant's Name	Participant's Signature	Date
Participant's email address		

Researcher's Signature	Date
------------------------	------

☐ I would like to receive an electronic summary copy of the results of this study, forwarded to the email address above.

☐ I consent to allowing the researcher to 'follow' my interactions and use them as data, on the social media platforms listed below. I understand that all third party posts will be not be used in the study, and identities will remain confidential.

Appendix D: Confidentiality Form for Transcriber



UNIVERSITY
OF MANITOBA

Faculty of Education

Transcription Service Confidentiality Agreement

I, _____, transcriptionist, agree to maintain full confidentiality in regards to any and all audiotapes and documentation received from **Michael Nantais** related to his doctoral study on *Teaching Using Social Media: A Multiple Case Study Approach*.

Furthermore, I agree:

1. To hold in strictest confidence the identification of any individual that may be inadvertently revealed during the transcription of audio-taped interviews, or in any associated documents;
2. To not disclose any information received;
3. To not make copies of any digital audiorecordings or files of the transcribed interview texts, unless specifically requested to do so by Michael Nantais;
4. To store all study-related materials in a safe, secure location as long as they are in my possession;
5. To delete all digital files containing study-related documents from my computer hard drive and any backup devices.

I am aware that I can be held legally liable for any breach of this confidentiality agreement, and for any harm incurred by individuals if I disclose identifiable information contained in the audiorecordings and/or files to which I will have access.

Transcriber's name (printed): _____

Transcriber's Address: _____

Transcriber's Telephone Number: _____

Transcriber's signature: _____

Date : _____

Researcher's signature: _____

Date: _____

Adapted from:

http://www.purdue.edu/research/vpr/rschadmin/rschoversight/humans/docs/forms/Confidentiality_Agreement_2011.pdf

Appendix E: Interview Guideline (Initial interview)

Interview, Part 1	
Interviewer:	Interviewee:
Date:	Time:
Setting/location:	
<p>Section I: Start of Interview</p> <ul style="list-style-type: none"> Introductions & thanks for participation. Go over information in consent letter (purpose of study, remind of right to withdraw, or to not answer any particular question, confidentiality). Discuss expectations as a ‘case’ for the study: interviews, informal discussions, documents, social media interactions. My responsibilities in return. Ask if there are any questions. Remind of audio recording of interview, start recorder. 	
<p>The purpose of this interview is to obtain some background information about you and your teaching philosophy, use of technology up to this point.</p> <p>Section II: Background</p> <ol style="list-style-type: none"> 1) Could you tell me about your teaching career? (How long have you been teaching? How long at this school? What about before this school?) 2) What grade/subject areas do you teach? 3) Please tell me about your school (size, goals/vision, environment). <p>Section III: Teaching philosophy.</p> <ol style="list-style-type: none"> 4) Please describe your general philosophy about teaching, that is, how do you approach teaching? 5) Could you describe your teaching methods? Has this changed over your career? [if so, explain how and why?] 	

- 6) Is there anything about your teaching you have been thinking of changing? Why?

Section IV: Technology Background

- 7) How would you describe your skills and knowledge of computer (digital) technology?
- 8) In what ways have you been using educational technology in your practice?
- 9) Why do you use these technologies in your practice?
- 10) How do you use them (use specific examples if you wish)?
- 11) Has using educational technology had any effect on your practice? If so, please explain how (use specific examples if you wish).
- 12) How do you go about learning about the use of new technologies?

Section V: Social Media Use

Let's talk a little more specifically about social media sites.

- 13) What does the term *social media* mean to you?
- 14) Do you already use social media: personally? In the classroom?
- 15) How would you classify yourself in terms of social media use?
- 16) What is it about social media sites that makes/made you want to use them in your teaching?

17) If you have been using social media already, how long have you been using these sites?

18) Please tell me which social media sites you make use of (plan to make use of) in the classroom.

a. Why did you decide to use these particular sites?

b. Please give some examples of how you make use of (plan to make use of) of these sites?

19) Have you received formal or informal 'training' on using social media in teaching? Could you describe these experiences?

20) What do you foresee as some of the benefits of using social media in teaching/learning?

21) Do you foresee any drawbacks or negatives about using social media in teaching/learning?

22) Is there anything else you would like to add or elaborate on?

Conclusion of interview

- Remind participant that once transcription is complete, an electronic copy of the transcript will be emailed to them so that they can check for accuracy & completeness. They can add or delete sections that they feel are not accurate or that may serve to identify them.
- Thank the participant again for their participation in the study & invite them to contact me with any questions that may arise.

Appendix F: Interview Probes

Intermediate Interviews	
Interviewer:	Interviewee:
Date:	Time:
Setting/location:	
Start of Interview <ul style="list-style-type: none"> Briefly review purpose of study, ask if there are any questions. Remind of audio recording of interview, start recorder. 	
<p>Probing questions to guide intermediate interviews.</p> <ol style="list-style-type: none"> Did you make use of any social media in the past few weeks? Describe the use? Describe why did you choose this media for this purpose? How did you learn about this medium? What happened? Would you do this again? Why or why not? What would you change? Why or why not? How did students react? Do you plan any use of social media in the near future? If so, please describe what you are thinking about: what will you use? How and why? What do you think will happen? (note: next interview session, we can reflect back on this answer). 	
Conclusion of interview <ul style="list-style-type: none"> Remind participant that once transcription is complete, an electronic copy of the transcript will be emailed to them so that they can check for accuracy & completeness, if they wish. They can add or delete sections that they feel are not accurate or that may serve to identify them. <p>Thank the participant again for their participation in the study & invite them to contact me with any questions that may arise.</p>	

Appendix G: Final Interview Guidelines

Final Interview	
Interviewer:	Interviewee:
Date:	Time:
Setting/location:	
Start of Interview <ul style="list-style-type: none"> • Remind interviewee of their rights: right to withdraw, or to not answer any particular question, confidentiality. • Remind of audio recording of interview, start recorder. 	
<p>You have been using social media in various ways in your practice over the past several months and we have discussed this use several times. This interview will ask you to reflect back over the entire time and add any further comments, observations about the experience.</p> <ol style="list-style-type: none"> 1) Let's start by reviewing the various social media that you used and in what circumstances. 2) What are some of the benefits you have experienced by using social media in teaching? 3) What are some of the drawbacks or negatives you have experienced by using social media in teaching? 4) What, if anything, has been lost by using social media that was present before? What, if anything has been gained? 5) Can you describe some of the barriers, or hurdles, that you had to overcome (or perhaps are still dealing with) in using social media as a teaching tool? 	

- 6) Please describe some of the supports needed, or that you found useful, when using social media in your practice.
- 7) Could you comment further on your observations about the effects of using social media in your practice, along with some examples? I will ask about several areas in turn:
 - a) Were there any effects on student attitude, motivation or engagement?
 - b) Were there any effects on student communication?
 - c) Were there any effects on student collaborative activities?
 - d) Were there any effects on student attainment of learning outcomes?
 - e) Were there any effects on student views or values, such as acceptance of others, empathy, understanding of other cultures?
- 8) Have you noticed any changes in the school environment that might have resulted from the acceptance & adoption of social media tools? Has this direction helped the school reach, or progress toward its stated vision?
- 9) Let's talk about possible effects on your practice & what might have caused these changes.
 - a) Would you say that using social media has changed your views/philosophy/perspective of teaching & learning?
 - b) Your teaching style?
 - c) The types of activities or strategies you use/will use in your classroom?

10) Is there anything else you would like to add or elaborate on?

Conclusion of interview

- Remind participant that once transcription is complete, an electronic copy of the transcript will be emailed to them so that they can check for accuracy, completeness. They can add or delete sections that they feel are not accurate or that may serve to identify them.
- Thank the participant again for their participation in the study. Remind them that they should feel free to contact me if they have any questions.

Appendix H: Brief Sketches of Participants

The following are brief sketches of each participant. They include some background demographic information, their views about their practice, and their thoughts about using educational technology and social media. Appendix I contains word clouds constructed from their interview transcripts. Together these appendices provide background material about the participants. Pseudonyms are used throughout.

Ann

Ann is a long time teacher, in her 35th year of teaching and 26th year in Prairie School. She has experience teaching in all grade areas from Kindergarten to her current role teaching high school English. She has also had experience as a resource teacher and in administration. Ann describes herself as a facilitator, very practical and pragmatic, using ‘mini-lessons’ and inquiry. She gives as much choice and control to students as possible to engage and interest them. While Ann encourages the use of technology in her classes, and uses it personally, she says she only has ‘basic skills’ and stated,

I am interested in using it to make my life easier and you know, you use it for the kids, but it’s not something I’m drawn too. I love some of the stuff that happens because of it but in terms of me learning it, you know I’m just not that interested.

In terms of social media, Ann is a self-professed beginner. She uses Facebook and Twitter to a small degree, exclaiming that “I have six friends!” She is also an avid Pinterest fan, but in general, she says that “I don’t get it”, being “way too private”. Despite her own feelings, she also says that she thinks she should be using social media in teaching; since the students are using it, she feels she should be as well. Her reasons include an aim to be more “green”, for communication, and to use it to help teach digital

literacy. Her goals for using social media at the beginning of the year were to incorporate a book club blog so students can write about books they are reading and to make suggestions to others. Ann also encourages students to utilize social media for a social justice project she includes in a grade 12 English course, believing it to be a good way to spread awareness. Indeed, she talked about several students who did just that the year before.

Nancy

Nancy has been a Business Education teacher for 32 years, 25 in Prairie School. She also runs an internship program and this is one of the reasons she is trying to use social media. Nancy believes in “quality and not so much about quantity” when it comes to teaching, stating that she is not a lecturer because of the hands on, skills based nature of what she teaches: “They have to do it to learn it”. For Nancy, like all of the teachers in this study, relationships are very important, stating, “it’s really all about the kids”.

Nancy proclaimed that her technology skills are “pretty low” for a business education teacher, adding, “personally, I don’t want to do it and so, if it’s not going to help my kids, then why bother?” In terms of learning about technology, she prefers to attend professional development or go on a visitation, preferring to be ‘taught’ how to use it, otherwise, she will explore it on her own. Nancy uses technology in her courses, since they are based on using certain applications, like word processing or spreadsheet software.

Switching to social media, Nancy explained that it is “different from technology in the sense that it is about communicating with another human being”. For her personal use, Nancy uses Facebook, but for her teaching she is using Edmodo, a Facebook like

social network made especially for schools. This is her second year using Edmodo in her courses. She has found more uses for the application as she has learned, and continues to learn, about it. With no one else in the school using it, Nancy relies on teachers in other schools who use the platform, as well as Edmodo support. Her major uses of the network are for assessment and motivation in her face-to-face classes and she has turned to it out of “desperation” as a means to communicate with her interns, who work in locations across the province. Several features, like the calendar, tagging, message capabilities, and smartphone apps make Edmodo useful to her.

Anthony

Anthony is yet another experienced teacher, in his 30th year, and fourth at Prairie School, with experience as a technology consultant in the past. Anthony teaches high school mathematics and ICT courses. He believes that learning should be enjoyable with various opportunities and ways for students to learn. Anthony says his teaching style has changed over the years as “students have changed”. While he tends to lean to ‘traditional’ methods to introduce topics, he has moved to being more of a facilitator, giving students more self-directed projects and freedom.

Anthony says he has higher than average technology skills, as evidenced by his background. He tends to enjoy getting his hands on new gadgets to “see how they work”. Educational technology has always played a big part in his classes, for research, as a tool for projects, and of course, is the topic of his ICT courses. In general, he does not emphasize the use of social media as much in his non-ICT courses admitting “I’m pretty sure there would be a way to do it, I just haven’t thought about it.” He does, however, allow students to use things like Facebook to retrieve required information, such as

personal photos. On the other hand, social media is front and center in his ICT courses. He has been using social media tools for “about five years” and calls himself a “novice user”. He uses them in his classes for several reasons, including wanting to be ‘paperless’, for sharing and collaboration with media such as Google docs and wikis, for awareness, for “instant gratification” (finding answers quickly), and for teaching about digital citizenship, ethics and appropriate use. In the past, Anthony has had his students collaborate using Google docs with students in a nearby town, and he hoped to do so again. For this year, he had a number of ideas in mind, including a collaborative project about digital citizenship using Google docs, and having students explore and present to the class some sort of web 2.0 tool.

Joseph

Joseph is a veteran of 26 years of teaching with the last 21 in Prairie School. His teaching assignment is grade 7-12 Industrial Arts and he had taught most of the ICT courses prior to this year. Joseph is perhaps the most knowledgeable person in terms of technology in the school and he has been the lead ICT teacher in the school for several years. He describes his teaching style as very hands on and project oriented, and noted that he changed from a “stand up at the front of the classroom” type of teacher to hands on early on in his career, perhaps due to the area he was teaching.

When the topic turns to technology, Joseph admits he is “fairly knowledgeable, most people come to me when they have a question” but does not consider himself that knowledgeable with social media. Joseph has always made use of technology in his classes, from graphics software to video production and, despite his self-proclaimed lack of social media expertise, he has also made use of a wide variety of social media tools

over the past several years, including; YouTube, Google docs, wikis, blogs, Prezi, Skype, a little bit of Twitter use, and Facebook. This year, Joseph's plan was to use a Facebook page in his industrial arts classes. His idea was that students would track their progress on various projects by posting photos and reflective thoughts. When asked why he thought of doing this, he talked about reasons such as; it is part of the students' life, having a broader audience to share with, and that a Facebook page also offered him some control since he wanted to "take baby steps" in implementing the idea.

Frank

Frank has been a teacher for 22 years, eighteen of them at Prairie School. Frank has taught a variety of subject areas and grades over the years, including some middle school, some high school History and English and now he teaches high school mathematics. Frank characterizes his teaching as "directing the kids and ... I still am too much the sage on the stage sometimes". In the past, Frank says he was very project oriented in subjects like History and English - and made much use of technology. In the math classroom, he likes to let the students "try and figure it out" and helping them do so, but not telling them how to do it. He says his classroom is "relaxed" and his philosophy is "respect the kids, and they respect you", the students are comfortable and "I think they like coming to my room".

When turning to technology, Frank calls himself "average" and also "average ... like a 6 out of 10" when it comes to social media. Frank has made use of technology throughout his career, now he uses an interactive whiteboard, a document camera, YouTube, and Twitter. Frank has become a big proponent of 'bring your own device', he openly allows and encourages students to use their devices, usually smartphones, in class

- for apps like a graphing calculator, to look things up, watch instructional videos, and so on. His biggest use of social media this year was a class Twitter account and using YouTube to put up explanations for students. While not social media by the definition used in this study, he made much use of texting. He talked of plans to set up a class blog and assign students to act as a 'scribe' of the week to blog about what was done in the class, however, this project is for the future. When asked his reasons for using social media, he had a variety of answers, including; "that's what the kids know now", for motivation, it makes learning more efficient, and it allows him to be available for help at any time.

John

John teaches most subjects in grade eight at Prairie School, he is in his 14th year of teaching, the last 12 in this school. John sees his role as giving students more responsibility and helping them learn organization skills as they move into high school. John likes to use life experiences and stories to make connections in the classroom; learning is hands on. Over the years, John said that he was "all about content" but is less so now, striving for "quality rather than quantity".

John characterizes himself as "comfortable" with technology, he stated "am I at the cutting edge? No", but he does try to keep current to keep the students interested. John added that he could become frustrated when things don't work and "will steer clear of things if the resources may present a problem". In his classroom, John uses a variety of technologies, including a document camera and lots of use of video, including YouTube videos to illustrate an idea or start a discussion. John learns from colleagues, as well as professional development workshops, and Twitter, but also learns from trying something

himself when he hears about it. In terms of social media, John said that he “definitely need[s] to get better”, he uses Facebook and Twitter, but more for professional and personal uses, in the classroom his students have been blogging for a few years. John makes use of technology and social media because it helps students “work at their own speed”, “keeps them interested”, and that “it happens right then and there”. John also likes the broader audience students have for their work with social media.

Mary

Mary is also in her 14th year of teaching, all in Prairie School. Her current teaching load is high school science and mathematics. Mary sees her role as helping students grasp concepts “by presenting the material in a way that they can understand”. She generally provides an outline and notes in a handout, then uses a variety of activities, including hands on activities and “acting out” a process. Mary stated that her teaching has changed over the years as she continues to try new ideas. She has also become more “flexible” in her scheduling of assessments, such as tests.

Mary said she is “pretty decent. I would say I was above average” when it comes to technology, when it comes to social media she said she is “above very good”, however, she qualified this in terms of various media, for example, not being as comfortable with Twitter as she is with Facebook. Mary makes use of technology in many ways in her courses, with the biggest change being the use of smartphones in the past year. The technology is used for things like research and math apps. For social media, her use is centered around Facebook pages - one for each of her courses - as a communication hub for students and parents. Her use of Facebook is partly because most of her students and parents are using it, she stated, “it’s a really good way to share ideas and to communicate

with them and if they have questions they can very easily get a hold of me”. Another reason she makes use of pages is that “I can put them in groups so I don’t have to be friends with them. They don’t have to follow me and I don’t have to follow them”. Mary has been using Facebook with her classes a few years now, even when it was not really allowed, however, that has changed.

Sally

Sally is in her 13th year of teaching, and 11th at Prairie School. Sally teaches high school science and works closely with Mary, doing team teaching for some classes. She views teaching/learning as a “team effort between you and the students”. She said that she does a “lot of explaining, like at the front” but also does as much lab work and other hands on activities as possible, adding that she is trying to move more responsibility to the students and have them do more.

When talking about technology, Sally stated that “she can do quite a few things”, but sees herself as behind. In order to learn about new technology she likes to work on it herself, often getting help from a colleague, Joseph. When turning to social media, Sally said she is a “beginner”, not making use of many social media. In her classroom, educational technology is used in many ways. She uses an interactive whiteboard, a document camera, YouTube, and more for a variety of purposes, from research to presentations. Her main uses of social media include a class wiki and Google docs. Sally uses these media for communication, engagement, and because access anywhere is so easy. One of her plans is, like Frank, to set up a class blog and use student scribes to add posts. She had tried this a few years ago, but did not get very far, so she wants to try this again in the future. She also would like to video record demonstrations and post them on

YouTube. Sally, like so many participants, talked about the lack of time to implement so many of these ideas, stating, “the time to learn it all and to do it and to keep up with it when you are first starting it, I think seems overwhelming”. This proved to be a recurring theme amongst participants.

James

The final participant, James, is the youngest, being in his seventh year of teaching, the sixth in Prairie School. James teaches physical education, and teaches it from Kindergarten right up to grade 12. In the past, he did teach in a ‘regular’ classroom as well, but physical education has been his teaching load for several years. It was clear that James is passionate about the importance of relationships in teaching. He enjoys working in a small school in that he often teaches students through the elementary years into high school, stating that he enjoys “building a relationship with new students” and maintaining a relationship ... as students grow”. His approach in the gym is “structured” so that students know what to expect and he creates a “risk free environment” where it is okay for students to make mistakes and they are not afraid to try new things.

James said he is “very comfortable with technology”, and has been given some time to help other teachers in the school with technology. Comparing himself to others he stated, “in this building, I would be an eight or a 10, in the world I would be a three or four”, but he likes to keep up with the newest things and learns by “playing with it, I explore it”. When it comes to social media he responded “I use it often”. James makes much use of educational technology. His biggest use of social media is in his health classes, using Google docs for collaborative work. He makes use of Twitter, having an account dedicated to his physical education classes. He also texts students a lot, uses QR

codes at stations in the gym, and mobile devices so students can video themselves doing a particular skill for analysis. James is always looking for new ideas to engage students and increase communication. Despite his heavy use of technology, he also sees drawbacks, stating, “kids become too reliant on it”, and believes that teaching and modelling appropriate use is very important.

Appendix I: Word Clouds for Participant Transcripts

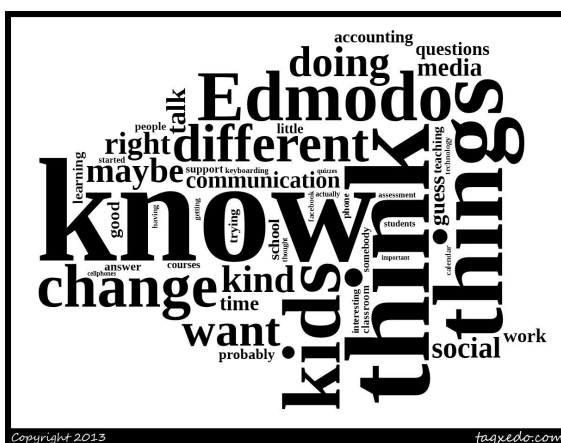
The word clouds in this appendix were created to illustrate the frequency of use for the top 50 words from the interview transcripts of each participant. Common words (such as ‘the’) were not included in the clouds. These clouds were one of the first steps in analysis and were used to provide a sense of the conversation and to inform the coding process. More frequent words appear larger.



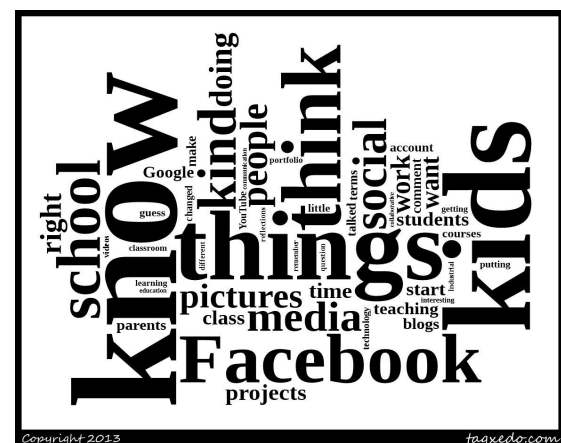
Word cloud for interviews with Ann.



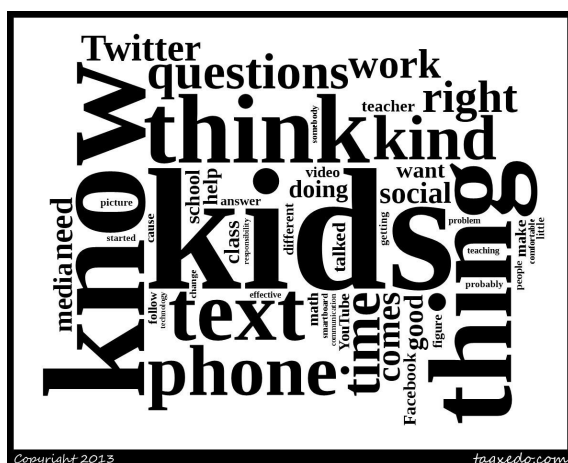
Word cloud for interviews with Nancy.



Word cloud for interviews with Anthony.



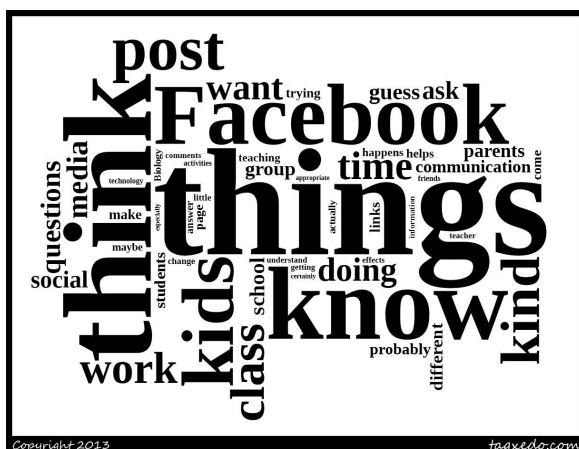
Word cloud for interviews with Joseph.



Word cloud for interviews with Frank.



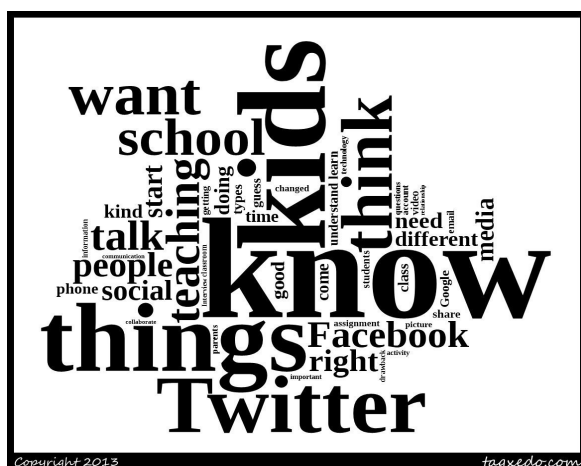
Word cloud for interviews with John.



Word cloud for interviews with Mary.



Word cloud for interviews with Sally.



Word cloud for interviews with James.

Appendix J: Research Ethics Certificates



Office of the Vice-President
(Research and International)
Research Ethics and Compliance

Human Ethics
208 - 194 Dafoe Road
Winnipeg, MB
Canada R3T 2N2
Fax 204-269-7173

APPROVAL CERTIFICATE

July 19, 2012

TO: Michael Nantais (Advisor O. Cap)
Principal Investigator [REDACTED]

FROM: Stan Straw, Chair
Education/Nursing Research Ethics Board (ENREB)

Re: Protocol #E2012:072
"Teaching with Social Media: A Multiple Case Study Approach"

Please be advised that your above-referenced protocol has received human ethics approval by the **Education/Nursing Research Ethics Board**, which is organized and operates according to the Tri-Council Policy Statement (2). **This approval is valid for one year only.**

Any significant changes of the protocol and/or informed consent form should be reported to the Human Ethics Secretariat in advance of implementation of such changes.

Please note:

- If you have funds pending human ethics approval, the auditor requires that you submit a copy of this Approval Certificate to the Office of Research Services, fax 261-0325 - please include the name of the funding agency and your UM Project number. This must be faxed before your account can be accessed.
- if you have received multi-year funding for this research, responsibility lies with you to apply for and obtain Renewal Approval at the expiry of the initial one-year approval; otherwise the account will be locked.

The Research Quality Management Office may request to review research documentation from this project to demonstrate compliance with this approved protocol and the University of Manitoba *Ethics of Research Involving Humans*.

The Research Ethics Board requests a final report for your study (available at: http://umanitoba.ca/research/orec/ethics/human_ethics_REB_forms_guidelines.html) in order to be in compliance with Tri-Council Guidelines.

BRANDON UNIVERSITY RESEARCH ETHICS CERTIFICATE

All research projects involving human subjects/participants that are carried out by persons connected with Brandon University must be reviewed and approved by the Brandon University Research Ethics Committee (BUREC) before being undertaken or submitted to an internal or external funding source (BURC, SSHRC, etc.)

Instructions: Please review the statements below and sign and submit two hard copies of this form to the Research Office. You will receive a signed copy of this certificate when your project has been approved by BUREC.

Name of Researcher(s): Michael Nantais

Department(s): Education

Name of Supervisor (if applicable): Dr. Orest Cap, U of Manitoba

Title of Project:

Teaching Using Social Media: A Multiple Case Study Approach

By signing this certificate, I agree: (1) to conduct my project in accordance with the principles for research involving human subjects as outlined in the Brandon University Research Ethics Committee Guidelines for Research Involving Humans and the Tri-Council Policy Statement, Ethical Conduct for Research Involving Humans; (2) to report any changes to the procedure and/or protocol of this research project to BUREC and, if appropriate, (3) to undergo subsequent review; (4) to submit annual progress reports to BUREC; and, (5) to notify BUREC in writing when the project is complete.

JULY 4, 2012

Date

Signature of Researcher

If Researcher is a Student, please have Supervisor sign below.

I have read and approved this Ethics Application.

NOTE: This portion of the certificate is completed by BUREC.

This certifies that the Brandon University Research Ethics Committee has examined the above research proposal and has concluded that in all respects the proposed research meets the appropriate standards for research involving humans.

July 26, 2012

Date

Chair, Brandon University Research Ethics Committee

Your first annual progress report is due:

July 26, 2013

Expires: July 26, 2017