EXPERIENTIAL NARRATIVE (STORYTELLING) IN A TECHNOLOGY-MEDIATED POLICE LEARNING ENVIRONMENT

by

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Abstract

Semi-structured interviews of thirteen novice police officers provided qualitative data for analysis of the effects of the use of storytelling in police training as delivered through a technology-mediated learning environment. Officers reported that stories engaged them, permitting them to obtain vicarious experience through their visceral connections with the storytellers and the topics. This affective engagement resulted in deep absorption, strong retention and good recall of the stories. Officers preferred this method of learning over lecture/tutorial styles. They use heard stories in their practice for learning and teaching, and to encourage bonds amongst themselves. They employ stories while responding to emergencies to inform their choice of actions and to assist them in understanding the event, critical usages in their busy environment.

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Chapter 1 - Overview of the Study

Introduction

This research project explored the efficacy and desirability of experiential narrative, also known as storytelling, as a pedagogy within a police technology-mediated learning environment (TMLE). The exploration sought the viewpoint and preferences of learners within this environment, through the use of a semi-structured interview research methodology and subsequent to a demonstration of the pedagogy as developed and presented through an e-learning course.

This research project also attempted to gain some measure of the effectiveness of storytelling in its engagement of the learner, and the retention of the content delivered, again through the interview questions. As a possible forward-looking direction, the study attempted to determine whether this pedagogy may have use in assisting new officers acclimatize themselves within the policing culture.

I decided to restrict this study to front-line police officers in their early years of training and development (one to three years service). The purpose of this was to study a group that is still early in its development and cultural acclimatization phase, in the hopes of determining what appeals to this group in terms of e-learning instructional strategies. I was attempting to find out what this specific group prefers, and how this preference affects their knowledge acquisition.

E-learning is the term used to describe the Durham Regional Police Service (DRPS) TMLE. E-learning in this context refers to the system by which the DRPS distributes courses to its members through its on-line intranet network. Officers access these courses in their

workplaces through computer terminals configured for this task, and records of the courses they have attempted and completed are automatically recorded by the system. The terminals provide keyboard, mouse and viewing screens along with audio and video capabilities. Officers operate these terminals at a time convenient to them. Two members of the DRPS create and develop courses for distribution through this system. These members form the e-learning section of the DRPS.

In order to focus the interview on the usage of storytelling and to provide a contrasting pedagogy, a course developed by the e-learning section of the DRPS, and forming a part of regular, on-going training through the e-learning delivery system was reviewed by the participants prior to the interview. This course consisted of real-life stories delivered by fellow members of the Service based on their experiences in the subject matter of problem-based learning and its application in the members' practices. I refer to this course as the problem-based learning storytelling course, or storytelling course in short. Details regarding this course are included in Appendix A.

The content of the storytelling course was based on Police oriented problem-based learning (PBL) concepts (Cleveland and Saville, 2007). PBL is a strategic thrust of the DRPS in addressing recruit training and problem solving in our communities. The content is currently delivered via classroom training, and due to time constraints it was planned to deliver some of this content through the DRPS e-learning delivery system. The current pedagogy within that system is to deliver the content through text display with audio and/or video voice over. This study examined an alternate pedagogy, that of storytelling delivered through the e-learning system.

Effectiveness relates to the producing of a desired result or effect (Merriam-Webster, 2008). This study probed for determining the effectiveness of the pedagogy to produce results related to the knowledge, skills and attitude acquisition by novice front-line police officers.

The DRPS employs police officers in front-line policing roles. Front-line police officers perform the functions of emergency response, traffic enforcement, investigation, conflict resolution etc. while maintaining high visibility in a DRPS uniform and equipment. These are the officers that patrol in marked police cruisers and are the first-responders to community and citizens' calls for assistance and service (DRPS, 2008a).

Central Research Question and Objectives

The focus of this research was an exploration of the effect of oral traditions (storytelling) in a technology-mediated learning environment on front-line police officers during their early years of training and development. This exploration covered three main objectives and questions:

1. What effect does storytelling delivered through a technology-mediated learning environment have on the skills, knowledge and attitude (SKA) acquisition of new front-line police officers?

2. What are the perceptions of new front-line police officers concerning the effectiveness of storytelling in the on-line environment?

3. To what use do new front-line police officers employ technology-mediated oral traditions in their positions?

Description and Significance of the Topic

Experiential narrative, also known as storytelling, is a traditional method of instruction in different cultures and societies throughout the world. It is both an oral and written tradition, widely used, with widespread acceptance. This research examined the use of storytelling in an online environment, probing for evidence of its acceptance by learners, efficacy in achieving learning objectives, comparison with one other more standardized pedagogy, and adaptability to the environment.

The significance of this research is several-fold. If it were shown to have usefulness and efficacy in the online environment, storytelling could offer another pedagogical option for on-line learning and facilitation. In the context of police cultural training, its usage would allow organizations and facilitators to better moderate the cultural and anecdotal messages passed down from experienced members to newer members in the organization. The research explored the significance of storytelling in the police environment, to determine if it has a current place within the on-line training of new officers, with a view to determining a value on storytelling as a training philosophy going forward.

The continuing increased demands and high community expectations for front-line policing causes the DRPS to continually search for methods to improve service delivery. The transition to a problem-oriented policing philosophy is the currently proposed method to achieve these aims (DRPS, 2008).

This new philosophy, combined with the need to find more time for front-line officers to problem solve in their community impacts on training in at least two ways. One, the amount of time taken by training must be sufficient yet limited enough such that it does not affect the time

spent away from patrol. There is a need for efficiency in training methods, in part due to the shift work scheduling of frontline officers in providing 24/7 coverage to the community. Secondly, there is a need to provide the novice police officers with the tools to conduct problem-solving in their communities (DRPS, 2008). This study assisted in determining efficiencies to support these goals.

Summary

This study is important in order to assist in the goal of finding efficiencies in training as the DRPS moves toward a new service delivery philosophy of problem-oriented policing. The context of front-line policing, and its increasing demands and 24/7 delivery coverage require an emphasis on selecting the right pedagogies for the right subjects, and ensuring that the learner is given the highest consideration when choosing the means by which he/she shall obtain the skills, knowledge and attitudes required for the profession. This study asked the learners for their perspectives, and explored whether the storytelling method suits their needs, within the context described.

Chapter 2 - Literature Review

This section reviews the literature surrounding the use of storytelling for learning and its usage in a technology-mediated learning environment (TMLE). Terms used are defined and linkages are proposed regarding the use of storytelling within the specific context of the Durham Regional Police Service (DRPS) TMLE.

Introduction

I followed a qualitative approach in this research, and in doing so was mindful of Creswell's (2003) approach to the positioning of literature reviews in a qualitative research project. He suggests that the literature review can be placed in several positions in a research paper: in the introduction to frame the study, in a separate section as traditionally done in quantitative studies, and at the end of the study as a basis for comparing the findings of the study with other findings in the literature. I refer to the literature in the latter two positions, using it in the different places when appropriate but primarily placing it here, in a separate section.

This research focused on the use of storytelling in a technology-mediated police learning environment. I relied on specific research taken from literature outside the realm of TMLEs, in order to set the stage for a transfer of the methodology from the traditional classroom environment to the online environment. The main focus of the study was to examine the utility of the storytelling methodology in the online environment, acknowledging its efficacy in other environments. Specifically, I examined the use of this methodology in a police TMLE. I sought to determine whether or not it had value in this

context. The literature on the issue suggests that it would, however, there is a dearth of research within this specific context.

There are references in the literature relating to the use of storytelling in the more-traditional teaching and classroom environments (Egan, 1989; Conle; 2003, Foster, 2000; Rossiter, 2002). I examined the use of storytelling in a police TMLE, as seen both through the eyes of participants in the research and through my eyes as well. In order to proceed on this path, I linked storytelling with andragogy and problem-based learning as a way of demonstrating the value of its usage at this time and in this environment. The concepts of storytelling, andragogy and problem-based learning are well covered in the literature. This review provides a brief overview of them, in an attempt at synthesizing a linkage towards provoking an understanding of the research method chosen here and the value of it.

Andragogy is defined as the theory of adult learning. In the andragogical model of learning, it is assumed that adults need to know the reasons for learning a particular subject, as well as possess a readiness to learn. Adults are assumed to be motivated to learn (through external factors such as better jobs, promotions etc.) and to have a life-centered orientation to learning. The adult is assumed to have a self-concept of responsibility for learning and self-direction, and an expanded and different base of experience than children do. These assumptions suggest a different approach to learning in adults as opposed to learning in children (Knowles, 2005).

The focus of this research involves the use of storytelling in adult learning and the use of stories in influencing the development of culture within an organization. In particular I was interested in the use of stories in the Police environment. The DRPS has adopted a

TMLE capacity in the last two years and it is critical to explore further usages of it. I have observed during my career that senior members quite often use police stories to pass on information to newer members, and these stories are told time and time again. Capturing and disseminating these stories in a digital format will support the adult learner and our increasingly technology-focused police training environment. This research provided basic knowledge about how best to join the traditional police culture with technology towards the goal of enhancing our professional development.

Definition of Terms and Contexts

It is important to define the terms used in research as they are introduced (Creswell, 2003). At this point several terms require definition, in order to further the understanding of the context in which they are used and to highlight the particular meanings of these concepts as used in this research. These definitions are provided below.

Narrative and storytelling.

When utilizing terms such as narrative, some confusion can result unless the term is specifically defined in view of the context in which it is to be used. Narrative inquiry as a research methodology (Clandinin, 2007) concerns the study of experience through the investigation of the stories of the individuals under examination. Jonassen and Hernandez-Serrano (2002) equate narrative with storytelling, and use these terms interchangeably.

Rossiter (2002) suggests that teachers story the curriculum in the classroom in order to leave room for the learner to interact and make meaning with the subject matter. Additionally, narrative is composed of stories and autobiography. Clark and Rossiter (2006)

focus on the latter form of narrative as a pedagogical method to assist learners in their development.

Conle (2000) suggests that there exist at least three forms of narrative (e.g. storied curriculum, stories and autobiographies). I consider storytelling to be one form of narrative. I do not equate narrative solely with storytelling, in the manner that Jonassen and Hernandez-Serrano (2002) use these terms.

Experiential learning.

Kolb and Kolb (2005) describe the concept of experiential learning as a philosophy of education, as opposed to being a toolbox of techniques and methods by which the learner can learn from experience. Experiential learning theory is constructivist in nature, founded on six fundamental propositions. In D.A. Kolb's study (as cited in Kolb & Kolb, 2005, p. 194), learning is defined as "...the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience." Learning and knowledge acquisition both arise out of experience, in this philosophy.

Experience is grasped in two different ways, either through reliance on abstract conceptualization or through concrete experience. Abstract conceptualization relies on interpreting concepts; concrete experience relies on tangible qualities felt while undergoing the experience. Experience is transformed by the learner in two ways: through reflective observation or through active experimentation (MacKeracher, 2004). In Kolb and Kolb (2005), these original four learning styles are expanded to nine, in order to accommodate other learning styles that have

been identified through further research. The philosophy of experience underlying learning remains intact. Learning remains a cyclical process within this model.

Experiential narrative.

Experiential Narrative (EN) is a term I use to distinguish it from other forms of narrative. Nair (2002) distinguishes between fictional and factual narrative, and positions storytelling as having the connotation of having primarily fictional qualities. EN is discussed in Conle (2000, 2007), and Conle and Boone (2008) study the use of EN in curriculum building and in the classroom. EN is positioned as factual real-life experiences presented to learners by tellers through narrative, or the telling of the stories.

In my research, the narratives used in the learning objects are based on the real-life experiences of those relating them, and contain factual details. I use the concept of EN interchangeably with storytelling, in order to steer clear of the possibility of the perception of fictional stories being used to relay content, in the learning environment of this research.

Experiential narrative and experiential learning.

I consider that experiential narrative is related to experiential learning, in that it can be seen as an attempt to commence the cyclical learning process by having the learner use the tellers' experiences as a starting point. Conle (2003, p.7) discovered that through shared EN during teacher preparation: "As these experiences were shared, listening to a colleague's narrative statement would elicit more 'data' from one's own life. At the same time, a vicariously obtained experiential teaching repertoire was being shaped for each candidate. "

Technology-mediated learning environment (TMLE).

Bates (2005), and Bates and Poole (2003) describe the types of and uses for technology in learning. Educational technology is defined as any teacher-student communications means other than face-to-face (f2f) or personal contact. This definition covers all communications means from writing (as in books) up to and including computer-based communications. For the purposes of this research, the focus is on computer-based communications.

Wilson (2007) considers the concept of personal learning environment (PLE) in the context of computer-based communications. The tools in these environments include such things as chat and messaging tools, weblogs, social software etc. The learning environment in which this research is conducted is a special case or subset of this personal learning environment categorization.

The DRPS maintains an e-learning delivery system using a learning content management system (LCMS) of commercial software known as EEDOFORCETEN$_{TM}$. This LCMS permits the use of video, audio, simulation, text and graphics usage within a computer-based browser presentation shell adaptable by the designer. As a singular entity it is distinguishable from Wilson's (2007) PLEs in that the learner has restrictions over the choices of software tools to assist in the specific content learning as delivered but it exists on a desktop that possesses other tools. The learner then does have choice over the selection of tools to be used to support their learning after using the LCMS. As presently configured, e-learning modules delivered through the LCMS are in tutorial (lecture) style.

Regardless of the amount of choice available to the learner, the concept of learning environment is applicable to this research, in that the participants undertook an e-learning course, delivered, as the name would suggest, through a computer-based LCMS. This learning environment, delivered through technology, is known as a TMLE.

Traditional Storytelling in Learning

Foster (2000) has demonstrated that storytelling is of value for both children and adults. His examination has determined that storytelling is affective and effective in learning by drawing attention to the change event that occurs in the transition during the story between binary opposites. Binary opposites are basic dichotomies used by humans to describe their world (e.g. good/evil, hot/cold, honest/dishonest). Foster's research shows that the underlying nature of stories is a change from one of these opposites to the other, the change being in a character or situation, and the change event being the storyline that causes or describes the change that occurs.

Egan (1989) suggests that sense-making, (in children at least), is accomplished by mediating between experienced phenomenon and abstract concepts. The example he uses for illustration concerns the binary opposites of hot and cold. Egan (1989) describes childrens' understanding of these concepts as originally flowing from the sensory distinctions between the opposites. The child then is able to understand concepts such as warm and cool by mediating between the original concepts of hot and cold.

Foster (2000) adds to Egan's work by bringing it into the realm of adult learning, and suggests a slightly different focus. He suggests that adults utilize stories to learn in a similar manner to children. He asserts that adults use binary opposites to make sense, and that

storytelling is not just for children. Foster provides a model for designing effective stories, a model that can be used to develop an instructional strategy for adult learning.

In addition, Foster (2000) focuses on the change event, rather than the binary opposites. It is his contention that this focus produces the learning, within the hard-wired context of binary opposites. He asserts this hardwiring to be a human condition. It is his belief that one way humans "...find meaning in the world is by organizing things into groups of binary pairs" (Foster, 2000, p.17).

Andragogy and Problem-based Learning

Training philosophies can be divided primarily between two concepts: andragogy and pedagogy (Conner, 1997-2004). Andragogy includes many of the concepts of adult learning, while pedagogy, though often used to describe all forms for teaching, is more appropriately thought of as teacher-focused and related to the teaching of children. In policing, at this time, there is a movement toward more andragogical approaches. One approach in use in the DRPS is that of problem-based learning, a methodology with roots in medical professional training (Cleveland & Saville, 2007). This approach endorses andragogy as an underlying philosophy (Cleveland, 2006). Both models focus on the learner, assuming that the learner has had previous experiences on which to build, and also assuming that the learner is self-motivated and self-directed in their learning (Saville & Cleveland, 2002).

An ongoing argument in the literature and the profession concerns a move to problem-based learning as an improvement to police training in response to community needs and the needs of the officers now being hired. Traditional police training has been based on behaviourism and cognitivism. Birzer and Tannehill (2001) proposed that a move to a more

learner-centred, constructivist methodology is due. Their work discusses problem-solving as an andragogical method, and suggests that andragogical methods emphasize past experiences of the learner and others. These past experiences are often relayed to others in a storytelling fashion. Problem-based learning can thus be seen as effective in andragogy, as it employs the previous experiences of adult learners.

Police Storytelling and Culture

Ford (2003) suggests that Police recruits enter the profession with a service orientation, and in possession of values similar to those of the general population. During training, these values are affected by the cynicism of the instructors both at police academies and during formal field training. The mechanism by which the impact is made is known as a "war-story" (Ford, 2003). These are stories passed on by instructors based on their or others' experiences. Ford suggests that the problems with these stories are that they are vague, and leave themselves open to interpretation. While acknowledging their wide-spread usage, Ford suggests that better use could be made of war-stories in order to ensure the proper values are passed on to new police recruits.

The DRPS is in a current process of organizational change. A service-wide transition to problem-oriented policing (DRPS, 2008) is underway that will serve to enhance police service delivery to the community through addressing the root causes of crime as opposed to merely responding to the symptoms. As such, new values are to be passed on to new police recruits, and the process for this is a new recruit training program. The program is based on problem-based training and intends to create a new culture within the police service. The new culture will require that officers are self-directed in their learning, and employ

problem-solving techniques in their everyday work. This is a significant change from traditional training and requires a shift in values and culture within the organization (Saville & Cleveland, 2002).

Gold medal policing.

Gold Medal Policing (McDonald, 2006) is a term developed from a study of police officers of the Ottawa Police Service and is used to describe the quality of the highest performers in their delivery of front-line policing services. The researcher set about to confirm the importance of mental readiness to perform by police officers, and drew comparisons between the skills of top police officers and top athletes. Of interest is the method by which top police officers were chosen as participants in that study; it is suggested later in this study that similar methods could be used to select officers for the purposes of telling stories to be used in training.

TMLEs for Professional Development

In this section, I examine related research from another field, as suggested by Boote and Beile (2005). After much effort expended to date there appears to be little if any significant research on the use of technology to mediate a police learning environment that features storytelling. This could be the result of a dearth of such research. However, the nursing profession is using storytelling with success and has found that storytelling helps create a collegial atmosphere between instructor and student, and allows the instructor insight into the student's learning style (Cangelosi & Whitt, 2006), both goals of the Police problem-based learning methodology as well (Cleveland & Saville, 2007).

The move in e-learning is towards a learner-centred approach, with research currently being conducted on instruments to adapt learning environments to learner's preferences and specific needs (Paraskevi, Tzouveli & Kollias, 2008). Shih, Feng and Tsai (2007) report in their review article that interactive technology-mediated learning environments are the most discussed subject matter in e-learning research. A conclusion can be drawn that there is strong and current interest in this area. In the same review, the authors noted that collaborative learning and problem-based learning both attracted a great deal of research attention, supporting the view that these models are essential in developing a constructivist approach in e-learning.

Other Relevant TMLE Initiatives

Carbonaro et al. (2007) demonstrate the use of interactive storytelling by grade ten students during a case study and pilot to determine, among other goals, whether improvements to writing skills were made during TMLE storytelling versus traditional writing exercises. This research involved collaboration amongst the University of Alberta, two large public school boards, and a computer games company (Bioware). The researchers were able to show that interactive storytelling can be used with young students, with good results, thus demonstrating a practical application in the technology-mediated learning environment.

Related to this practical demonstration is a model proposed by Salinas (2006). The model is based on a distinction between teacher and learner roles, utilizing Bloom's taxonomy. Bloom's taxonomy defined six major categories in the cognitive domain and ranked them from simplest (concrete) to most complex (abstract). The categories used were

knowledge, comprehension, application, analysis, synthesis and evaluation. This taxonomy is hierarchical in nature and cumulative in the sense that the lower levels were prerequisites to obtaining mastery of the higher levels (Krathwohl, 2002).

Salinas (2006) suggests that as one moves through the taxonomy towards the levels of synthesis and evaluation, the appropriate technology moves from PowerPoint displays to threaded discussions, instant messaging and authoring software. Simulations are placed in the mid levels of the taxonomy, in the application and analysis levels. The learning environment is one where motivation is enhanced through the use of technology chosen to match the desired learning outcomes.

Suthers, Vatrapu, Medina, Joseph and Dwyer (2007) propose the addition of knowledge maps to support threaded discussion usage in TMLEs. Their primary hypothesis was that conceptual aids such as knowledge maps provide visual artefacts that can enhance the text-based discussion, thereby aiding collaborative knowledge construction. Their research supported this hypothesis, and their findings also suggest that it is the interactivity of such conceptual aids that enhances the knowledge construction. I am interested in whether or not the interactivity characteristic of storytelling enhances knowledge construction in TMLEs.

Aesthetics of Design

Parrish (2005) suggests that instructional design (ID) should embrace an aesthetic approach in order to better encourage learner motivation and participation. This aesthetic approach can be viewed as an appeal to the affective domain of the learner; the attempt to

provide a heightened level of experience that engages the learner so that the learning experience does not become boring or routine (Parrish, 2007).

In a TMLE this can be accomplished in a number of manners, including the move towards a more learner-controlled learning environment, described above as a personal learning environment (PLE) where the learner has more choice over the use and availability of software and a change in the relationship between technology and learning (Wilson 2007; Johnson & Liber, 2008). Another method of enhancing the aesthetic appeal and design may prove to be through the use of storytelling, delivered through the TMLE. Our natural affinity for stories engages us, provoking empathy for the storyteller (Hsu, 2008).

Experiential Narrative, Vicarious Experience

"Supporting learning with stories can help students to gain experience vicariously" (Jonassen & Hernandez-Serrano, 2002, pg. 69). This viewpoint, supported through the work of Conle, Li and Tan (2002) provides support for the use of experiential narratives (stories) as an instructional tool. Their research suggests that previous knowledge attained by a learner surfaces in that learner through the experience of hearing, reading and telling stories. In this view, stories engage the learners' previously attained knowledge, a prerequisite for the building of new learning.

Parrish (2007) argues that learning experience is never vicarious, and that the learner is always the protagonist in their individual learning. While at first seeming contrary to the above position, on reflection it is not, if viewed from the perspective that the stories of vicarious experience as delivered by a secondary source only serve to commence the learner's own learning experience, through the act of assisting in the surfacing of the

learner's previously attained knowledge. As Clandinin and Rosiek (2007) note about knowledge, "...our representations arise from experience and must return to that experience for their validation (p. 39).

It is this latter position that I wish to explore further during this research. I will attempt to determine how effective the use of stories is in causing learning in the participants, and explore how this occurs. My position then is that engagement of the learner occurs on at least two levels, a natural affinity for stories and through the "surfacing" of previously attained knowledge.

Schema Development, Emotions and Memory

Schema is defined as cognitive knowledge structures that are built through experience and are stored in memory (Knowles, 2005: Merriam, Caffarella & Baumgartner, 2007). New knowledge is incorporated into the existing knowledge structures of a learner, with this existing schema acting to filter the newly received knowledge (Knowles, 2005). Since each learner possesses different schema as a result of their previous experiences and learning, each learner will possess the newly received knowledge differently and emerge with different new schema constructs (Merriam, Caffarella & Baumgartner, 2007). Where the newly received knowledge can be related to the existing schema, learning is more easily undertaken. If the newly received knowledge challenges existing schema, learning is more difficult (Knowles, 2005). In the latter case, learning will not take place unless the learners' previous knowledge and beliefs are altered significantly.

Affects and emotions impact on schema developments. New schemes are developed through cognitive appraisals of experience combined with affective/emotional valuations of

these experiences. These schemes can be thought of as "...organismic schemes (i.e. collections of neurons distributed over the brain that are cofunctional and often coactivated)" (Pascual-Leone & Johnson, 2004, p. 200).

Affects and emotions are integrated in the learning process alongside cognitive processes (Dai & Sternberg, 2004). Emotions arise from integrated and concurrent activity in the brain within its assorted structures and circuitry (Izard, 2009). Emotions also permit of their own schema, or behavioural tendencies. When viewed in this manner, emotional schemas can be thought of as emotions "...interacting dynamically with perceptual and cognitive processes to influence mind and behavior (sic)" (Izard, 2009, p.7).

In the field of cognitive psychology, memory is considered the key element in examining mind and behaviour (Hunt & Ellis, 2004). Memory is involved in all processing of experiences, and in the recording and use of newly acquired knowledge. Advances in the study of memory have recognized multiple memory systems with the influence of emotion on memory appearing to be linked to the brain structures know as the amygdala and the hippocampus (Phelps, 2004). These advances have been assisted through brain imaging technologies developed in the last twenty-five years (Hunt & Ellis, 2004). Positive Emission Tomography (PET) and functional Magnetic Resonance Imaging (fMRI) are two technologies that permit measurement of brain activity with its various structures.

Both PET and fMRI can measure the effect of emotion on memory. The conclusions from these measurements suggest that several brain regions act together to assist in the retention and retrieval of emotionally arousing events (Labar & Cabeza, 2006). Memory and

retrieval are each boosted by emotions impacting on the learner as measured through these technologies.

Summary

Glesne (2006) notes that in qualitative research the literature review is ongoing, and is not fully complete until after the data collection and analysis is conducted, as completion of these areas may require further literature review. I kept this in mind throughout the study, and have returned to the literature on occasion to better reflect on my understanding of it and its relation to this study. As Clandinin and Connelly (1989) indicate, both method and phenomenon are closely intertwined when it comes to storytelling, and it was incumbent upon me to understand this more fully as the research unfolded, in order that the method was properly attuned to the phenomena under review.

The literature supports the use of storytelling as a pedagogy for adult and children (Foster, 2000), and supports a finding that appealing to the affective domain of the learner enhances the learning experience (Parrish, 2007). Cognitive psychology research provides further support in describing the impact of emotion/affects on learning (Izard, 2009) and memory (LaBar & Cabeza, 2006; Phelps, 2004). The literature also supports the notion of vicarious experience being obtained through storytelling (Conle, 2002; Conle, Li & Tan, 2002). In the context of TMLEs, recent research supports a move to adapt TMLEs to learners' preferences (Paraskevi, Tzouveli & Kollias, 2008). Currently the subject of interactive TMLEs is gaining the most interest within e-learning research (Shih, Feng & Tsai, 2007).

This support for interactive, affective, learning experiences in a TMLE, combined with the demonstrated success of vicarious experience acquisition through storytelling in non-TMLEs has partially driven the desire to conduct the current study. The final motivation is the DRPS itself; the DRPS is striving to move towards more andragogical-based learning methodologies, and storytelling in its TMLE may assist in achieving that goal.

Chapter 3 - Research Process and Methods

In this chapter I will present the processes and methods chosen for this project. The overarching paradigm is that of interpretivism (Willis, 2007). Qualitative methods of inquiry in the form of semi-structured interviews informed by narrative inquiry (Denzin & Lincoln, 2008a; Pinnegar & Daynes, 2007; Clandinin & Murphy, 2007) were used. Constructivist grounded theory methods (Charmaz, 2008) informed the data analysis, findings and discussion processes.

Overview of the Field

Qualitative research is a human-centred approach that tries to make understandings from the perspective of the participant, working in an inductive manner and allowing for patterns, interpretations and theory to emerge from the data collected (Palys, 2003). It seeks answers to research questions by examining individuals within their social settings (Berg, 2007). The qualitative approach considers reality to be a social construct, with the researcher's role that of an instrument in the process (Glesne, 2006). Qualitative research may be considered a paradigm view of what research is based on; an interpretivist view, where the goal is to explore the local understanding of an issue related to human behaviour as opposed to attempting to seek generalizable truths (Willis, 2007).

An interpretivist paradigm for research does not dictate a specific research method (Willis, 2007). It is left for the researcher to make the choice from a number of strategies, including grounded theory, case study, ethnography, narrative inquiry and action research (Glesne, 2006). These strategies in turn suggest a number of tools available for use in pursuing them: participant observation, interview, survey etc. (Rugg & Petrie, 2007) and

methods from different research patterns can be used within the qualitative approach (Willis, 2007).

"Interpretivism views all research as subjective, but proponents are not extreme relativists who see every viewpoint as just as good as any other" (Willis, 2007, p.122). The goal of qualitative research, as in any other paradigm of research, is to obtain relevant truths, and in the interpretivist paradigm of qualitative research, it is acknowledged that the truth is relative to the producer and subjects of the research (Willis, 2007).

Qualitative research is a process that situates the researcher within the context in which the research questions are being answered (Denzin & Lincoln, 2008a). In a research design, it is imperative to determine what strategies of inquiry will best employ the interpretive paradigm of qualitative research within the specific context under review (Denzin & Lincoln, 2008b). In making this choice, consideration is given to the methods for the collection and analysis of data (Denzin & Lincoln, 2008b).

Choosing a method for data collection depends on what the researcher is attempting to learn, with consideration to making effective use of the time allowed for the research (Glesne, 2006). It is important to visualize what the data will look like (Berg, 2007). Qualitative data is rich, holistic and detailed (Miles & Huberman, 1994).

Interviewing is one of three frequently used methods for data collection in qualitative research, producing significant amounts of narrative stored either in the handwritten notes of the researcher or through audio or video taping (Glesne, 2006). It is an interactive method between researcher and participant, conducted in real time and produces natural language, giving a depth and detail to the data collected (Rugg & Petrie, 2007). Data analysis requires

three steps, data reduction, data display and conclusion drawing/verification (Miles & Huberman, 1994). Coding is a method to reduce data to manageable amounts (Glesne, 2006; Miles & Huberman, 1994) and computer software programs are greatly used in managing the data in terms of display, coding, sorting and referencing (Glesne, 2006).

Overview Summary

Qualitative research is an interpretivist methodology that considers the context, participants and researcher to all factor into the truths being sought. Qualitative research acknowledges the subjectivity created through the inclusion of these factors (Willis, 2007; Glesne, 2006; Berg, 2007). It is a research paradigm that requires a strategy and method selection to match these ingredients with the methods for obtaining and analyzing the data that is sought (Denzin & Lincoln, 2008a, 2008b; Glesne, 2006). The next sections propose the use of this research approach and methods for this study.

Specifics of this Study

This section discusses the specific approaches taken in this study. A qualitative approach based on a semi-structured interview was selected along with a pre-study pilot to assist in refining the interview questions.

Introduction

This section presents an overview of the research methods used in answering the research questions, as stated below. A grounded theory and inductive approach (Palys, 2003) is more suitable than a deductive approach for this study. A deductive approach is somewhat narrow in nature, and given the emphasis on determining learners' preferences

and viewpoints, a rich and deep data collection is preferable for letting the data provide the answers before arriving at conclusions.

The need to utilize methods that match the questions under investigation (Ercikan & Roth, 2006) is understood. It is critical to choose methods that will best answer the questions, from multiple perspectives including depth and breadth of data collection and reduced bias, while building on the strengths and minimizing the weaknesses of the methods chosen. A mixed-method approach (where applicable) may be a better choice than attempting to stay in one paradigm. Methods should be chosen based on their utility in the research underway, regardless of where they fit within an advocacy debate between quantitative and qualitative purists (Johnson & Onwuegbuzie, 2004).

As Dewey (1938/1997) noted in relation to the existence of dualisms inherent in debates on education, selecting a different approach is not about finding a middle way between opposed schools of thoughts, nor is it about patching together pieces picked out from amongst the different schools. It is more about selecting the most appropriate method or finding a new method to achieve what is desired (Johnson & Onwuegbuzie, 2004). In making my selections, I have surveyed the methodology literature currently at my disposal and have selected specific methods as appropriate to my research questions.

Interactive Inquiry

I proposed that an interactive inquiry approach be taken to the gathering of data. Palys (2003) describes the data gathering process as potentially involving different methods including surveys and interviews. Data gathering methods can be distinguished from

transcription and analysis methods. These three processes overlap (Davies, 2007) yet there are different choices of methods within each.

In this study, I conducted recorded interviews with the participants, utilizing semi-structured open-ended questions. The interviews provided for the opportunity to expand on the responses of the participants as made; I used them as an opportunity to probe for clarification and explanation (Glesne, 2006). The interviews formed the primary data-gathering process in this study.

Narrative Inquiry

There are at least three forms of narrative: storied curriculum, stories and autobiographies (Conle, 2000; Merriam, Cafarella & Baumgartner, 2007). This research makes use of the story form, by providing stories based on experiences of a relatively short duration, and related to a specific event, as opposed to a longer more autobiographical nature. I classify storytelling as one form of narrative, and define it as a narrative description and discussion of an event or experience as related through the participant of that event. I distinguish it from narrative inquiry, which I consider to focus on a more extensive form of narrative, that of the autobiography, and to be involved with inquiry, by definition. As opposed to this area of narrative inquiry, I am not examining the life stories; rather, I am examining the reaction of participants to the use of stories, and possibly their short stories in relation to them.

I viewed this research as being more a study of learners' use of narrative as opposed to the study of narrative itself, and distinguished this line of inquiry from what I understood to be narrative inquiry as relates to life stories. I was examining for effect and efficacy of

the use of narrative, not just experiences or stories themselves. I made this as a subtle distinction, and am aware that it concurs with Pinnegar and Daynes (2007). They postulate that narrative research may include the study of the effects of stories, thus positioning my type of research under the umbrella of narrative inquiry.

However, I am aware that there are disagreements about what narrative inquiry constitutes. On one hand, a definition is offered: "Narrative inquiry: A form of inquiry that analyzes narrative, in its many forms, and uses a narrative approach for interpretive purposes" (Denzin & Lincoln, 2008a, p.563). On the other hand, Clandinin and Murphy (2007) discover varying views of narrative inquiry between this first one and that which suggests that narrative inquiry is more about the exploration of the life-stories of individuals. They have observed that the field of narrative inquiry is a shifting landscape, and researchers may wish to make their own definitions of it, in order not to keep the boundaries too tight.

I suggest that this study belongs within the field of narrative inquiry. The primary inquiry method is an interview that seeks to hear from the participants their ideas and stories about how they use storytelling to learn. I will be collecting their stories, and analyzing the content. In this way, the research will be an examination of stories about storytelling, which I consider a form of narrative inquiry.

Participant Population

For the purposes of this study, newer officers are defined as those officers having one to three years Police experience. In the Durham Regional Police Service (DRPS) there were ninety-eight officers hired in the previous years that met this experience level. Of this group of ninety-

eight, three had left the DRPS since their recruitment and three were unavailable, being on maternity or paternity leave, leaving ninety-two available for contact. Of this number, ten are female and eighty-two are male. All of this group perform in front-line uniform patrol functions.

The total group size of ninety-two officers was too large for me to reasonably have time to interview all of them within the bounds of this study. Consequently a smaller sample was required. Qualitative studies often use smaller samples of people than quantitative studies (Miles & Huberman, 1994), and it is necessary to determine how to choose this smaller sample. As this is a preliminary, exploratory study of the topic, I wanted to interview a reasonably large number of participants to get a broad understanding (Glesne, 2006). As a minimum, I decided that ten participant interviews were required. I was not looking for cross-reference to variables such as age, gender, education etc. I was merely looking for responses from the target population to the questions about the topic. Further studies may be useful to explore other variables.

Names were selected from the list of ninety-two, starting with the first name in each class hired, and proceeding with every fifth name, until twenty names were obtained. Invitations (Appendix B) were sent via e-mail to this group and of this original mailing nine participants were interviewed, one of whom is a female. In order to obtain a desired participant number between ten and twenty, a second mailing was sent to another ten names drawn from the list of ninety-two. In order to ensure a female voice to the study, the second mailing included six females, three of whom were interviewed. In total, thirty invitations were e-mailed, thirteen members were interviewed, of whom nine were male and four were female. Four other members expressed willingness to be interviewed but were unable to keep or make appointments because of work commitments and last-minute changes to their schedules.

Issues of gender, race, political affiliations, and religion were not considered in this examination with the exception of the desire to have a female voice, as noted above. The study focused on the responses of participants to the use of storytelling in a technology-mediated learning environment (TMLE), and did not consider the impact (if any) of these other variables.

To achieve the minimum requirement of ten, I followed the invitation process noted above and made my invitations by way of written invitation (Appendix B), being prepared to interview all that responded. There was no attempt made at random sampling in order to benefit from statistical analysis; the selection was merely an attempt to obtain a participant group through invitation by taking a cross-section from the list. This sampling technique provides for some semblance of impartiality in selection, but is not suitable for statistical generalizations. It can be classified as a purposeful random sampling, a technique that seeks to justify a sample size based upon reasonableness and completeness under the circumstances (Patton, 2002).

Setting

The research was conducted at the subjects' work locations. The population under review works at five different work locations within the DRPS. Each of these locations has the requisite technology and accommodations to conduct the research. The research was conducted during the subjects' work hours, at times convenient to them. The interview averaged approximately one hour to complete.

Data Gathering

I selected a sample from the group of newer officers, and interviewed them using a semi-structured approach, after they had completed the course. I conducted the interviews at the members' workplaces, using audio tape and digital recordings to capture the data. The data from participating members remains confidential and is not attributed to any participant. Data was transcribed and then analyzed through NVIVO8 data analysis software. It was important to determine the satisfaction with the technology at the beginning of the interviews, and to ensure that the courses had been completed. The officers that accepted the invitation to participate were reminded to complete a storytelling course prior to the interviews.

The Storytelling Course

An e-learning course was made available to the entire membership of the DRPS prior to this project. This course utilizes the storytelling method to deliver content, and is further described in Appendix A. I refer to it as the storytelling course.

The storytelling course presented three videos ranging in length from seven to twelve minutes. The videos were of DRPS officers relating their experiences with problem-based learning methodologies implemented in projects and training. One officer spoke of her experiences as a recruit conducting a community problem-solving initiative. Two officers collaborated on telling their experiences coaching a recruit officer. Another officer told about his team's efforts to address a community problem.

All the videos were of officers in frontal view, generally from mid-torso up. Each video was preceded by a text screen that briefly describes the subject of the video following. Each video was followed by a screen containing reflective questions presented in text format.

Interview Questions

In order to be certain the storytelling course was completed, and that the participants were familiar with and able to use the DRPS TMLE system, two preliminary questions were asked:

a) Could you please describe your experiences with the e-learning system of the DRPS

b) Have you completed the problem based learning storytelling course?

After this, further detailed questions were asked in order to explore the viewpoints of the participants about the use of the storytelling method in the course. These questions were designed to get the participants' views and opinions, and flow from the central research questions, leaving room for expansion.

The following are the additional questions used to guide the interviews (Appendix D):

1. Do you like the storytelling method?
2. What use did you make of story-telling during your recruit training period?
3. How do you learn best during the use of e-learning courses?
4. What suggestions do you have to enhance the delivery of e-learning?
5. How did these courses help your understanding of problem-based learning?
6. Did you hear stories during your recruit training? What did you learn from them?
7. Do you tell stories? What do you tell stories for?
8. What use do you think there is for stories in e-learning? In training?
9. Do you have anything else you wish to share that pertains to the research topic?

Pre-Study Question Refinement

I conducted a pre-study pilot review to determine the suitability of my original questions. The pilot served the purpose of clarifying the questions and helping determine their appropriateness and clarity. The study was useful in helping decide whether the right questions and enough questions are being asked (Glesne, 2006).

Pilot participants consisted of a group of five front-line police officers of the DRPS having four to six years service, placing them outside the bounds of the study participant group. Reviewing the proposed questions with this group enabled an understanding of the utility of the questions chosen. Pilot participants were volunteers selected through convenience sampling (Glesne, 2006), as the goal in this was to seek input on the questions but not report on the responses; rather, the input was used to assist in generating further thoughts on the matter and for clarification and verification only.

In this pre-study pilot, brief notes were made to facilitate the decisions regarding the questions to be used in the study. The pilot review was not audio-taped or recorded in any other fashion. It served merely as a review to help determine the suitability of the questions to be used in the main study. The notes helped with the generation of ideas. The pre-study pilot did not provoke any revisions to the original questions. Participants stated that the questions were relevant and that the meaning of words used was clear and understood.

Semi-structured Interviews

A semi-structured interview gives opportunity for the "...interviewer and the interviewee to explore meaningful topics of interest to both, without the restrictions of preset questions associated with structured interviews" (Muirhead, 2000, p.41). I am of the

opinion that this type of interview best matches the questions that I have proposed. I see this structure as a combination of open-ended and structured questions, which is a useful strategy considering the exploratory nature of this research. Asking a few broad questions to generate free-flowing response from the participants can provide for increased depth in the responses while structured questions can add to the breadth (Palys, 2003).

A combination or semi-structured interview can lend itself to funnelling (Palys, 2003) and laddering (Rugg & Petre, 2007). Both techniques can lead to easier coding of the data. I used open questions to probe the depth of the participants' responses to the subject matter and asked more questions for clarity of the initial answers. Data collection is a selective process (Miles & Huberman, 1994), and the amount of data collected impacts on the time required for analysis. It is estimated that analysis can take between two to five times the amounts of time spent on collection. With this in mind, a semi-structured interview that starts with open-ended questions and asked more-structured questions for clarification is the best fit for this research. A further benefit of the semi-structured approach is the ability to follow up on any interesting topics that arise (Rugg & Petre, 2007).

I structured the interview to include two preliminary questions to probe the participants' experiences with the DRPS e-learning system and to determine whether they had completed the storytelling course. This was followed by open-ended questions, targeted to generate insights and data from the participants concerning the subject matters being researched. The interviews were audio-recorded and transcribed.

Transcription Process and the Use of Quotes from the Data

Converting audible data (interview tapes) into written form (transcriptions) is a reflexive, interpretive process involving judgements and decisions about the data and what to transcribe (Bailey, 2008). Oral speech is different from written language, and transcription is an interpretative representation of speech, not purely an objective representation as choices are made by the transcriber as to what to present (Green, Franquiz & Dixon, 1997). The transcriber should produce accurate and readable transcriptions that reflect the social setting of groups being studied, while showing respect for the people who are being transcribed (Roberts, 1997).

A transcript is an analytical tool for use in a research study (Green, Franquiz & Dixon, 1997). Preparing the transcript is a process of analysis in itself. "The researcher makes transcription decisions depending on purpose, theoretical stance, and analytic intent. In turn, these transcription decisions influence the analysis, interpretations, and implications for theory and practice" (Lapadat, 2000, p. 206).

Lapadat (2000) further suggests that a researcher will make proper situated decisions about the use of transcription if it is recognized that the transcripts do not stand for the events themselves, but rather are a result of analysis and interpretation. With this recognition, the researcher should be cognizant of the implications of using verbatim quotes in reporting on the study.

> "Oral language transcribed verbatim may appear as incoherent and confused speech, even as indicating a lower level of intellectual functioning. The publication of incoherent and repetitive verbatim interview transcripts may involve an unethical stigmatization of the interviewees or the groups they belong to" (Kvale, 2007, P. 132).

With these cautions in mind, and an understanding of the interpretive nature of the transcription process itself, I chose to prepare transcriptions in a near verbatim manner. The transcripts represent both the participants and my own interpretations of their responses (Green, Franquiz & Dixon, 1997). In presenting quotes from the transcripts, I have revised them from their oral conversation nature into a more fluent written style, in order to show respect for the participants and the social context they reside in (Kvale, 2007; Roberts, 1997).

The participant interviews were recorded with a Sony TCM465V tape cassette recorder and an Olympus DS-2 digital recorder. I made the transcriptions from the tapes using a Sanyo cassette transcription machine. The transcripts were made into word documents. The transcribed word documents were e-mailed to the participants for their review upon completion. I received positive responses regarding accuracy of the transcriptions from seven of the participants, and no response from the other six.

Submitting transcripts to the participants for review is a form of member checking. Member checking is a step towards assisting in the validation of the data obtained, through helping to ensure that the thoughts and ideas of the participants have been correctly captured during the data collection process (Glesne, 2006). After any clarifying issues were settled, the data was analyzed.

Data Analysis

The data consisted of thirteen transcribed interviews from the participants. The analysis of this data proceeded by way of coding. Coding requires the researcher to examine the data (e.g. a complete interview) and determine what categories can be assigned to smaller components of it. The data is split into smaller segments, a form of data reduction but with the intent of data

retention (by keeping track of the coded segments) in order to continue to revisit it (Richards, 2005). Coding is a way of interpreting data and aligning it into its constituent parts (Bazeley, 2007; Richards, 2005).

The open coding method (Corbin & Strauss, 1990; Rubin & Rubin, 2005) was used. This method is used to open up the data and develop new conceptual meanings from the phenomena reflected in it (Richards, 2005; Corbin & Strauss, 1990). Open coding is a basic coding type used in grounded theory. It is an interpretive process used to break the data down analytically (Corbin & Strauss, 1990). It forces the researcher to examine preconceived ideas against the data itself, placing the focus on the data rather than the preconceptions (Bazeley, 2007). Through ongoing comparisons and review of the data, any categorizational errors are overcome and proper classifications of data and concepts are made (Corbin & Strauss, 1990).

Open coding is well adapted to use with computer software analysis. Data reduced to segments is easily stored in analytical software and easily accessed for further revisiting. Upon revisiting the data, the software can easily recombine segments of the data. The software aids the researcher in the ongoing coding and analytical process (Bazeley, 2007; Kvale, 2007).

The transcription documents were imported into NVIVO8 computer software for the purposes of coding and analysis. NVIVO8 provides the ability to select portions of text from inputted documents and assign codes to them, allowing the researcher to group codes and perform queries on both inputted documents and coded text. I coded each inputted transcription document in its entirety, creating codes as I went (open coding), until I had completed a broad-based coding of all the data (Richards, 2005).

This broad-based coding resulted in forty-six individual code categories. In NVIVO8 the term "node" is used to reference an area that contains coded text. In the initial coding, these nodes are not linked to other nodes and are subsequently known as free nodes. Free nodes may be linked into thematic categories known as tree nodes (NVIVO 8 Fundamentals, 2008).

After the initial broad-based coding, I commenced linking the forty-six free nodes. This process was a review of the material coded at each free node towards the goal of developing thematic categories into which to place the nodes. This was a process of data reduction (Richards, 2005), and resulted initially in a reduction in free nodes from forty-six to thirty-eight due to duplications or overlapping categories within the original coding process. The excess free nodes were merged into the remaining thirty-eight, and the process of linking these nodes commenced.

I reviewed the thirty-eight free nodes, and ultimately linked them under six major thematic categories. This process included the writing of memos and a journal as my reflection on the nodes was underway, combined with the use of graphic software (MindManager7) to prepare models for further reflection on the categories as they emerged from my analysis. Queries were conducted within NVIVO8 for the purposes of determining links between categories and for observing word usages by the participants. This process revealed the six major themes of environment of the participants, connections to stories and tellers, the affects on learning, the methods of learning vicariously, the recall of story content and the usages of storytelling in policing. These themes emerged from the data during the analytical process.

The emergence of themes through data analysis is a fundamental canon of grounded theory (Corbin & Strauss, 1990). The themes evolve throughout the analysis and form the basis

for theory development as the coding ensues. “Concept recognition, coding, and theory development are part of a continuous and seamless package” (Rubin & Rubin, 2005, p.222). Constant comparison of the emerging themes to the data and to each other is made in an iterative fashion as the analysis works towards theory development (Willis, 2007).

Grounded theory is better used to explain the data analysis than to justify it. (Charmaz, 2008; Silverman, 2005). Grounded theory offers a general framework in which to conduct research (Willis, 2007), but risks being a poorly used technique unless used in conjunction with a proper paradigm of social reality (Silverman, 2005). The grounded theory framework is particularly useful when used in conjunction with a constructivist paradigm (Charmaz, 2008). In this formulation the researcher is acknowledged to be within the context of the phenomena under research. The researcher assists in and influences the understanding of the phenomenon under study by being a part of the context of the study itself. The constructivist paradigm is also referred to as interpretivist (Glesne, 2006; Willis, 2007). The view of reality as interpretivist assists in demonstrating the contextual nature of understanding (Willis, 2007) and is the paradigm this research study operates under, as noted earlier.

Validity in the Interpretivist Paradigm

“Good qualitative research gets much of its claim to validity from the researcher’s ability to show convincingly how they got there, and how they built confidence that this was the best account possible” (Richards, 2005, p.143). It is particularly important for the researcher to show the steps taken during the analysis of the data, from initial transcription through coding and on to theory development. Validation in this regard is a matter of constant checking, questioning and interpreting the findings (Kvale, 2008).

Validation of a project is achieved in a number of ways. For example, analytical induction provides for ongoing hypothesis reevaluation against all sources of data (Silverman, 2001). Using this method and providing a written record of the results and steps taken can assist showing how the findings fit the data (Richards, 2005). These written records, reflective journals, memos, field notes or other researcher writings become a further source of data (Jasper, 2005). This further source of data is used for triangulation against other data in the project, working as a validation tool. Reflective writing and the articulation of it provides a transparency of process which permits the readers to place their judgement on the validity of the findings (Jasper, 2005).

Where validity is interpreted as meaning truth (Silverman, 2001), the assessment of validity relates to the degree of fit between reported findings and data (Richards, 2005). The judgment of fit is in large part related to the credibility of the researcher, which in turn is demonstrated through the processes and steps undertaken in the analysis. These processes and steps must be articulated by the researcher (Richards, 2005). Through proper articulation researchers can provide evidence of rigour and systematic analysis that supports their credibility and that of their research findings (Silverman, 2001), assisting the readers in assessing the validity of any theories developed from it (Richards, 2005).

Theory development itself is a process of validation. A developed theory that provides a convincing explanation of the data, combined with transparent methods and clear findings speaks on its own as to its validity (Kvale, 2008). Validity in this sense alludes to the craftsmanship of the researcher in combination with the usefulness of the results. Under an interpretative paradigm, the usefulness of results is related to the degree of understanding of the phenomena in

the context being examined, rather than the discovery of generalized, universal laws (Willis, 2007).

Eisner (1998) suggests that usefulness or instrumental utility, as he calls it, is the most important test of a qualitative study. He posits that usefulness is determined through the value of the understanding reached in the study. In this he differentiates between validity as truth and validity as right. Validity as truth suggests a literal truth; validity as right considers the degree of fit between data and conclusions as suggested earlier (Richards, 2005). If the results are a right fit to the data, then utility is achieved. As Eisner (1981, p. 6) states: "What one seeks is illumination and penetration. The proof of the pudding is the way in which it shapes our conception of the world". Goodman, as cited in Eisner (2008), considers that rightness of fit is superior to literal truth in the appraisal of a qualitative research project.

Reflective Journaling as both Data Source and Validity Check

During this project I learned the value of keeping a journal and writing down thoughts as they occurred during all parts of the research. This exercise is well-covered in the literature (Richards, 2005; Jasper, 2005; Kvale, 2008) but cannot be taken lightly or underestimated. Thoughts can be fleeting, I found, and without the practice of recording them in written fashion, they are subject to loss.

Writing individual thoughts down as they occur enables one to have a running documentary on one's thought development. This is critical, in order to see where one has been in one's thinking, and to see where one is headed. Having a trail in writing of one's thought development assists in illuminating the process that is being undertaken by the investigator; the investigator can demonstrate how conclusions were arrived at (Richards, 2005).

The accumulation of written thoughts can result in a significant new collection of data. Software analysis programs such as the one used here, NVIVO8, can be used to reduce this secondary data source as well; the investigator can code his/her own thinking once it is transcribed into word documents (Bazeley, 2007).

The advantage of coding one's own thinking along with the coding of sources becomes apparent when the investigator is attempting to interpret the source data (Richards, 2005). This became very apparent to me when I was trying to understand whether a mechanism was at work in the way the participants learn from and use stories in learning and practice. My understanding relied upon my interpretation of what the participants were telling me, and my written thoughts made as the process unfurled helped me immensely in deciding whether what I read in the participants' transcripts was the same as what I thought was said there. Where I suspected a difference between these two, I was compelled to dig deeper into the analysis to see what caused the difference and to determine whether or not what I thought was said was in fact an underlying meaning to the written words of the transcripts.

Acknowledging that the above process existed for me, enabled me to clarify in my mind when I believed I had discovered an underlying meaning or not, within the framework of my role as interpreter. This process was a comparative process that compared the data produced by the participants with the data produced through my reflective journaling.

I used this knowledge of my process as a way of confirming what I thought I saw in the participant data. I liken this process to a calibration of the research instrument. In qualitative research the researcher is the research instrument (Eisner, 1993, 1998).

Glesne (2006, p. 169) asks the question, "Is there any 'right' interpretation?" Her answer is complex, but leaves it to the investigator to "...help others to think and see in new ways" (p.169). I think that illuminating my thought processes assists in showing others the way in which I arrive at interpretations. My way was based on keeping accurate written records of my thoughts as the study ensued, both to provide a trail and to enable the self-reflective process that I used to determine whether I was seeing other meanings in the data. The lesson then is to again emphasize the importance of these written records, as both a trail for others to follow and as a device for the researcher to aid in their interpretive role.

Limitations of Research

The research is limited in a number of ways. The sample size is small for quantitative analysis but acceptable for qualitative analysis (thirteen subjects). The participant selection method and sample size (non-random sample) meant that I am unable to draw generalizations about the larger population.

The storytelling course was a preliminary effort and therefore the results are not able to give a complete view of the use of storytelling in the police TMLE. The research is not a fully comparative study of TMLE methodologies, but focuses on storytelling, seeking the reaction and thoughts of the participants on that specific matter.

Causal relationships may be difficult to demonstrate through a qualitative methodology. The methodology does not provide for a standardized experimental process with a manipulation of variables. However, an expanded view of causality would include terms such as influences, generates and emerges from (Palys, 2003). It is then appropriate to suggest causal-style findings if one considers the canon of grounded theory that theory

emerges from data analysis (Corbin & Strauss, 1990). However, it is also imperative to note the different views of causality held by the quantitative, experimental researchers (Bazeley, 2007), and to be aware of the potential limitations of suggesting causal links when using methods such as those used in this study.

Ethics Review

This examination involved the use of human subjects, and therefore required an ethics review prior to commencement. The relevant forms were prepared and submitted along with the interview guide and consent forms. Approval to proceed was granted by the Royal Roads University Research Ethics Board on November 4th, 2008. In addition, a privacy agreement was entered into with the DRPS.

All efforts were and will be undertaken to ensure confidentiality and security of the data collected. Participants will remain anonymous, and are not identified in any way in the research findings. They were notified of their right to withdraw prior to data collection, and fully notified of the intended use of the data in the consent form (Appendix C). Participants were required to sign the consent form prior to participation in the study. They were given the consent form prior to the commencement of data collection and had no consent followed, the data collection would not have continued.

There is no conflict of interest in this research. I am not in a supervisory role over any of the participant group. I have little or no contact with the participants. We are fellow employees of the same organization (DRPS). This was addressed by disclosure in the consent form and invitation letter. There is no possibility of the study impacting negatively on the organization or participants.

Researcher's Biases

I am a member of the DRPS and engaged as the manager of the training branch. A small unit within this branch is dedicated to the creation and distribution of e-learning courses to the rest of the members of the DRPS. I am not in a supervisory role over any of the study participants.

Summary of Methodology and Procedures

The methodology used is a form of narrative inquiry within the qualitative research paradigm. I made inquiries about the participants' experiences with storytelling as a learning tool. I referred to an e-learning storytelling course as an example to illuminate the distinctions between traditional delivery of DRPS e-learning and the use of storytelling in e-learning. The storytelling course used was developed by the DRPS for the purpose of delivering instruction on the subject of problem-based learning. This course delivers instruction through the use of real-life stories presented in video-taped format by other members of the DRPS.

Participants were chosen from a cohort of DRPS police officers having one to three years of police experience. This group numbered ninety-two. I initially invited twenty to participate, hoping for a minimum of ten participants. The original selection was made by taking a cross-section from the group of ninety-two by selecting every fifth name from an alphabetical list. A second selection was made and as a result thirteen interviews were done, nine of male officers and four of female officers.

The interview was semi-structured, with an interview guide and room for expansion of topics as presented in the interview. The questions in the guide were piloted prior to the

study to determine suitability, number and language. The response from the piloting was positive and the questions did not require modifications.

Data from the research was recorded through audio-taping of the interviews in two forms, cassette tape and digital recording in order to have a backup in the event of failure of one of the methods. The tapes were transcribed by the investigator and inputted into NVIVO8 qualitative data analysis software. The data so obtained was coded and analyzed (using grounded theory methods) with the help of this software and MindManager7 graphic analysis software for modelling purposes.

Chapter Four - Research Study Results

Introduction

In this chapter I commence with a brief discussion of the participation and representation of the officers in this study. I then report on the major themes that emerged from the data analysis.

I considered three main objectives and questions in the exploration undertaken in this study. Six major interconnected themes emerged from the data in response to these objectives. These themes are the topics of environment of the participants, connections to stories and tellers, the affects on learning, the methods of learning vicariously, the recall of story content and the usages of storytelling in policing. All of these major themes are considered in light of the delivery of stories through a technology-mediated learning environment (TMLE) which takes the form of e-learning courses offered within the Durham Regional Police Service (DRPS) system.

The first theme is the environment of the study participants. All participants are engaged in front-line policing activities, working shift work and operating marked police cars attending to calls for service from members of the communities in which they work. The findings in this area portray this environment and its effects on the learning of the officers.

The second theme involves the connections that the officers report making with the stories and the tellers. The findings report on how the officers relate to the storyteller, the topic in the story and the connections with the job they perform.

The third theme concerns the affects that stories have on the learning of the officers. This theme covers how elements of the affective domain influence the learning experience. I examine

the perceptions of the officers and provide insights into what these affects are and their influences on the officers' learning.

The fourth theme is vicarious experiential learning, and how it relates to the officers and their perceptions of the impact of other officers' experiences as told to them through stories. This examination includes the subthemes of learning from the mistakes and successes of others and the sharing of experiences amongst officers.

The fifth theme discussed is the ability of the officers to recall the content of stories. I examine how content is absorbed, retained and recalled as reported by the officers, and offer insight into these processes.

The sixth theme concerns the usages to which the officers put the stories they have heard. In this discussion I examine how stories are valued in relation to officer safety issues, and examine how stories are used for teaching and learning, as well as to promote bonding between officers.

Figure 1 (below) demonstrates the six major themes and their sub-themes in the shape of keys attached in a circular fashion to each other. The dark portion of each key contains the major theme, with the lighter portion containing three minor themes attached respectively. The themes are arranged in a circular fashion with bi-directional arrows connecting. This is done in order to suggest a complex, non-linear relationship between each major theme.

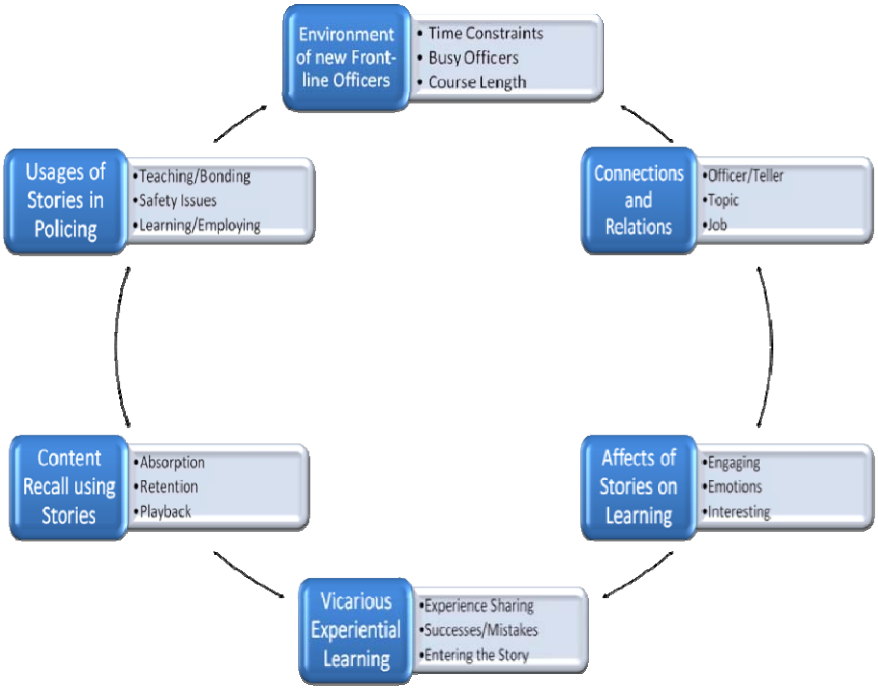


Figure 1. Six major themes from the findings.

The findings of this study are presented using these major themes as category headings, commencing after a brief review of the attributes of the participants and a discussion of the target demographic group that they represent.

Participation and Representation

The targeted group for participation in this study was those officers with at least one year and no more than three years of police service. There were ninety-two members in this category. Thirty invitations were made to members of the target demographic group. Seventeen positive responses were received, indicating a desire to attend the interview. Four were unable to schedule an appointment due to other commitments. Thirteen of the thirty invitees were interviewed, representing fourteen percent of the ninety-two members of the target group. The interviews were conducted over a two month period, November and December 2008.

Four of those interviewed are female, representing forty percent of the females (ten) in the target group. Nine males were interviewed, representing eleven percent of the males (eighty-two) in the target group.

All of the interviewed females are under 30 years of age. Seven of the interviewed males are under thirty years old, two are over thirty. All members serve in a frontline uniform patrol function, at one of the five police stations of the DRPS.

Pseudonyms are used in this report to identify individual participants in the study. Bonnie, Judy, Kathy and Susan are the female officers. Ian and Robert are male officers, over the age of thirty. Alan, Ben, Donald, James, John, Karl and Mitch are male officers under the age of thirty. The following table summarizes the names and descriptors of the participants.

Table 1. Participant attributes.

Name	Gender	Years of service	Age
Bonnie	Female	1 to 3	<30
Judy	Female	1 to 3	<30
Kathy	Female	1 to 3	<30
Susan	Female	1 to 3	<30
Ian	Male	1 to 3	>30
Robert	Male	1 to 3	>30
Alan	Male	1 to 3	<30
Ben	Male	1 to 3	<30
Donald	Male	1 to 3	<30
James	Male	1 to 3	<30
John	Male	1 to 3	<30
Karl	Male	1 to 3	<30
Mitch	Male	1 to 3	<30

The recording of attributes of the participants beyond the foregoing was not done, in order to assist in ensuring anonymity of the participants and to reassure the participants of their anonymity, towards the goal of creating an interview environment where the participants felt confident in revealing their true thoughts in detail. The interviewing of police officers for research purposes can present difficulties to the interviewer in terms of reliability and validity of the information provided (Huberts, Lamboo & Punch, 2003). It is important to establish credibility when interviewing police officers for research purposes in order to gain open and extensive responses, and to minimize any concerns that the provided information might be shared with others in a non-anonymous fashion (Cancino & Enriquez, 2004). Police culture tends towards presenting a wall of silence in response to those who would make inquiries (Huberts et. al., 2003) and towards the protection of the culture from criticism (Woody, 2005).

Consequently, the decision was made to favour reassurance and anonymity of the participants over the recording of their attributes, in order to facilitate data collection, on the premise that the less the number of attributes collected, the more the anonymity of the officers is assured. The officers in the study supported this approach, and consequently expressed confidence in the method and a willingness to participate freely. It should be noted that the small size of the female participant population (ten officers) increased the difficulty of protecting their anonymity, and the choice of characteristics to be reported was made in order to provide the best possible protection for them.

The Environment

The first major theme discussed is that of the environment of the new front-line officers. This theme includes the working conditions of the officers and a view of the demands for their

time. Participants of the study reported three major sub-themes in this area: time constraints, busy officers and course length.

E-learning courses are available to officers through computers located in their various work locations. Officers are required to complete courses deemed as mandatory training within specific time periods, and are permitted to take other courses considered non-mandatory when time permits. Courses range in length from thirty minutes to two hours.

Time constraints.

The officers reported that the demands of their occupation were such that they had little time to spend on e-learning courses. Their work day is filled with numerous tasks and emergent situations that interfere with their ability to sit at a computer and devote their full attention to the e-learning courses. Numerous interruptions interfere with their ability to complete the courses at one sitting. Jim reported that he preferred to take the courses when he was not rushed, and when there were no interruptions, in order to complete them at one setting. It was his view that under those circumstances he gained the most knowledge and usefulness from a course. It was a common report that there was not enough clear time during a working shift to complete a course.

The quality of time available for e-learning courses was also raised, in reference to the ability to remain attentive to the course. This concern is related to the shift work nature of the job of these officers. These officers work a twelve hour shift, both dayshift and nightshift. Officers may have some free time during the early hours of the morning on a night shift, but this is the time when they are most tired and least attentive. Rarely is there time during the dayshift to complete these courses. Donald stated that:

> Often the best time, when you are most awake, most alert, you're also the busiest. It's difficult to find an appropriate hour when you're at your most attentive and also able to actually give your full attention to the module.

In the early hours of the morning time may be available for taking these courses as the calls for service response by front-line officers diminish. However, at this time of the shift, officers will have been on-duty for between nine and twelve hours, and will be attempting the course work at times such as four o'clock in the morning. After having worked these many hours already, and at this time of the morning, officers have less capacity for learning and have a desire to complete the course as quickly as possible, irrespective of whether any knowledge is gained or whether the course material is even viewed or read.

Busy officers.

Reference was made to the activity level of front-line officers. Robert believes that their ability to concentrate on a course is limited by the demands placed on them, and that courses presented in any format should be limited in length, in order to ensure that the officer does not lose interest. When interest is lost, the officers will fast forward through the course without absorbing or paying attention to the content, in order to get to the end so that their completion of the course is recorded by the system. As Judy stated, she is interested in the important bits of information that she needs, and loses interest quickly when what she perceives as peripheral information is provided. She feels the pressure of the time constraints placed on her, and wants to get to the heart of the information she requires, without having to sit through a lengthy course which provides information she does not believe she needs nor has the time to acquire. Donald perhaps expressed this point most concisely, "The time they can devote to the courses is really

short, and they just want to get it finished because it's said to be mandatory, they have to get it done."

The method of presentation of the content was important in addressing the issue of needs and wants of the participants as raised by Judy in relation to the perceived time constraints. For subjects not immediately thought to be of interest to the participants, it was felt that the use of an officer to deliver the content would be beneficial in creating interest in the content. Mitch felt that this type of presentation would automatically engage the viewer due to the respect of younger officers for an experienced fellow officer. Mitch also felt that the presenting officer would be perceived to be delivering content that was important to the viewer because they both perform the same job, and the presenter would therefore deliver content that the viewer needs. The use of an officer compensates for the time constraints perceptions held by the officers and induces interest in the content.

The ability of these officers to concentrate on a course was felt to be connected to the job they do. Ben described his fellow officers as being "Type A" personalities, which he qualified as being an active type that would not sit and spend a lot of time going through a PowerPoint presentation on the computer. He felt that there was little benefit received by officers when mandated to do this type of task. John echoed this theme, describing his environment as go, go, go. He and his fellow officers are always rushing from service call to service call, and are unable to slow down enough in their routine, to fully absorb any information delivered in the style that Ben mentioned.

Related to the ability to concentrate is the ease of access to the information required to perform the job, given the activity level of the officers and need for quick access. James noted

that access to information required to perform his duties required him to carry a large duty bag containing written reference material weighing nearly twenty-five kilograms. A duty bag is carried as an accepted practice by the officers in order to organize various books and reference materials reference in daily activities. There is no requirement of what must be carried in this bag; officers generally take items such as copies of the Criminal Code, other federal and provincial statutes, and other written items and forms for reference purposes. His ability to access the information in all this written material is inefficient due to its size. As he states:

> I mean my duty bag probably weighs about fifty to sixty pounds. The amount of knowledge, the different directives, the different forms for the different types of calls, it's a lot to remember. I can't remember it all so I've developed binders to store it in. Every time I go to a call there is something different happening, different protocols are required, and so I have binders with sheets I just keep them in my duty bag. If I get to a call and I can't remember then I can reference my binder and pull it out, but that necessitates carrying around about 50 to 60 lbs of paper with me. I don't have a problem carrying this because I always know what I'm doing and how I'm supposed to do something but to compress that into a file and put it on a computer would be beneficial.

Course length.

This problem of access further compounds the reported time constraints in the environment of these officers. With limited time to access information, and limited time available for absorption once accessed, ease of access becomes of critical importance. Frustrations as expressed by James indicate a need to ease access to the vast amount of information required by these officers. The ease of access combined with condensed course

length suggests courses presented in small bites of information, accessible to the officer on demand. Ian would like these bites to be summarized at the end, in order to simplify the message and enable him to better recall the main points of the information received. Robert makes his point about this issue in relation to video clips as presented in the learning object used in this study:

> I think that when you have a video clip, when it goes over a certain period of time you start losing the officer. Front-line officers are constantly multi-tasking trying to get several things done at once within a limited time period. I think if the video goes on for a certain period of time, or if it goes from video to video, the person starts to lose interest. If it is something that they're doing career-wise it piques their interest and they'll take tidbits and use that for what they want.

These officers all reported a desire to have videos with a maximum length of five minutes each. The consistent theme was to provide the information in a concise fashion, in order to meet the attention span of the officers within the time constraints of their workday. Access on demand is desirable, placing these officers in the position of willing consumers as opposed to captive consumers of the information imparted by e-learning courses.

The Connections

This section discusses the major theme of the connections and relations identified by the participants. The theme contains the sub-themes of connections and relations with the officer/teller of stories, the topic and the job of the officers.

The officers in this study reported valuing connections between themselves and three main items: the storyteller, the topic, and the job of the frontline officer. In all cases they stated

that the ability to recognize the storyteller as being one of them, a fellow officer, was important to them in gaining their attention and interest.

Connection to the storyteller officer.

One advantage of knowing the storyteller was the ability of the officer to contact that person after viewing the story, in order to ask questions for clarification on the issue being talked about. A second key point was in relation to credibility; officers reported that if the storyteller was reputable, then the impact of the story was enhanced, that is, the officers assessed the value of the story based on the credibility of the teller.

Kathy comments on this point:

> I'm going to be more apt to listen to what they have to say because it's an officer that I know that I relate to. I'm not as likely to fast forward through it, I will listen to what they have to say.

Ian holds the view that the storyteller must be genuine. James, in addition, offers the caution that the wrong storyteller could present a problem:

> I see knowing the officer as being a strength most of the time. If there's a personality conflict or you don't like the way they do business then I could see that being a negative as well. I think overall it would be more of a positive thing than negative but that is only my opinion. Depending upon who's telling the story there could be that problem.

Other comments on this point expand on the concept of identifying with the storyteller. The officers felt that the ability to hear a story based on the experiences of one of their own

caused them to pay more attention, and made them more willing to give their attention to the storyteller. As Judy says:

> It also makes you want to listen that much more because you know that these people can relate to what you do. For example, in the breath tech course that I took, we had a lot of our course taught by scientists. When that happens it's sometimes hard, because in policing, you want to learn from someone that can directly relate the material to what you actually do and provide examples of how that affects you as a road officer.

These comments support the idea that the credibility of the storyteller is of great importance to these officers. The first measure is the fact that the storyteller performs the same job as the officer. Having a fellow officer tell the story automatically puts the officers at ease; they appreciate being instructed by one of their own. The second measure is the credibility of the storyteller as a fellow officer, as perceived by the officers. The storyteller should be genuine, with a good reputation.

Placing the storyteller into a video delivered by a computer-based medium was welcomed by the officers. They felt that the medium created an environment for them that made them feel as if the storyteller was speaking directly to them, as if they were engaged in a direct conversation. This provided them with a sense of comfort by removing the anonymity of text-based instruction, putting a real face to the content of the instruction, as both Mitch and Ben report. The reduction of this anonymity provides for the one on one contact that they want, a connection to a real person that helps them put the content of the storyteller's message into a context related to their perception of the storyteller's reputation and background.

Connections to the topic.

The issue of the relation and connection to the story topic was raised by the officers. They reported that they were able to put themselves into the story, while it was being relayed to them, thus connecting directly with the experience and scenario told by the storyteller. As James put it:

> Storytelling for me is one of the ways I learn best. I will try to put myself in the shoes of someone else. It just makes me try to relate so there would be a process of affirmation of what I'm seeing, how does this relate to me, who is that person, how do I know them what did they do. It's real life situations that you're hearing and this makes me process the stories deeper, than like I said, clicking through some multiple choice questions, seeing some fake scenarios things that don't necessarily apply to me. In that sense I think storytelling is really good.

The connecting with the storyteller, and with the story being told, is, as Karl says, a way of bringing his own experience into the story being told. The officer is able to relate to the story, connect with it, and, as discussed later in this chapter, create new understandings and meanings for the officer, which the officer can employ during their workday tasks.

Connections to the job.

The connection of stories with the job these officers do is a critical component in their view, and in some ways acts as the fundamental ground upon which their affection for stories is based. This connection relates to the actual work the officers are engaged in. They describe their work as primarily being about stories. During every workday, they are engaged in hearing stories

from victims, suspects, witnesses etc. in the attempt to try to assess where the truth lay, in all of the presented stories. From this assessment the officers make a determination of what happened, and decide if a problem exists or has occurred that necessitates their taking some action.

These officers see their job as a hearer of stories in the first instance, performing a critique and weighing of these stories in the second instance, and finally becoming a storyteller in the third instance, through the mechanism of police reporting. This pattern in their work was identified as analogous to their using a similar pattern in their learning. Susan drew the comparison between the police work she does and her learning method. She feels that they are the same process; in her job she hears stories, makes assessments; in her learning, she performs the same steps.

Bonnie is of the view that people will remember better if content is placed into a story, as she feels that stories fit a pattern and a pattern is easier to remember. Her view of this is relevant to the idea of similar patterns existing in both the learning and job tasks. In the field, officers follow the pattern of hearing, critiquing and reporting on the stories they hear. In their learning, officers follow the pattern of hearing, critiquing and making use of the stories they hear.

Bonnie's observation of patterning and remembering is insightful from the perspective that the job task pattern supports the learning pattern, and vice versa. As Susan notes, during learning through storytelling, she puts herself into the story, in order to visualize what is occurring, and thereby gain a better understanding. She notes that this is the same approach she takes when conducting her job tasks; she places herself within the situation she is investigating in order to make sense of it.

The Affects of Stories on Learning

The next major theme is that of the affects of stories on learning. This theme captures elements of the affective domain. Three minor components are discussed within: the areas related to engagement, emotions and interest.

The officers distinguished between the delivery method of the storytelling course in this study and the delivery method of previous e-learning courses. They characterized the previous method as being the "Click Method" (CM), wherein the primary delivery style was a text page with occasional audio voice-over or video summation of the content, with the ability to "Click" past any screens through mouse clicking on a button on the bottom right corner of the displayed page. Their overall view of the CM delivery style was universal; they felt that little learning took place and they only completed these courses because they had to, often skipping through parts quickly using the click button to move through pages without review. It was their opinion that the content of these courses was not of value to them, and that they had covered most of the material in some other fashion. They felt that the requirement to do the courses was only to satisfy an employer requirement for administrative purposes and not something of use to the officers in their job duties. As John described the CM course:

> I don't feel it's a high quality learning experience compared to other methods. Most of the guys here have life experience, university, college, high school experience. It's kind of hard to compare that type of education to something you get by clicking on a mouse and it's not very interactive. I give it a low to moderately low learning experience.

Although rating low as an overall experience, some comments were made in support of specific elements of the CM courses. Alan felt that the quizzes were useful as he enjoyed being

tested on the material. When Alan made a mistake during the quiz he was able to remember the content better as a result. Ian felt the same way about the quizzes; he enjoyed the testing of his absorption of the content. However, the majority of the officers found little value in the quizzes. These quizzes are structured so that if a wrong answer is chosen, the officer can then click on another answer, and so on, until the right answer if selected. Ben observed that this method resulted in no need to read or retain the content prior to the quiz, one only need go directly to the quiz page and click away until success was achieved with correct answers, in order to receive a completion record for the course.

Engagement with the stories.

As opposed to the findings related to the CM, all officers felt the storytelling method of course delivery to have value. This value was considered through a number of ways. All officers considered themselves and their colleagues to be visual learners with the exception of Ben, who felt that he learned best in a classroom situation, where he could engage in discourse with an instructor in order to present his viewpoints and questions for instructor critique and response. Ben understood that it was not always possible to assemble classroom instruction for officers, and given that constraint, did report that storytelling was a better method for e-learning than the CM, as he stated, “It’s more, it’s closer to interactive than a text page.”

The remainder of the officers reported that visual learning appealed to them in a number of ways. Susan reported that: “Well personally, I’m a visual learner, so I enjoy watching and listening, watching someone talk.” When she watches someone talk, she is able to put herself into the story, and picture what is actually going on. John echoed this sentiment, stating that when the video captured some action, this resulted in a visual stimulation for him, which

engaged his senses and increased his attention to the video. In his words, “It’s almost like being hypnotized when you’re seeing something that’s moving, your attention’s on it.”

The moving picture was felt to be superior to a static text screen, as it caught the attention of the viewer, and engaged their senses of vision, and hearing, through the different tones and volumes in the storyteller’s voice. These different tones and volumes in the voice were not apparent during the reading of text in the CM courses. In the storytelling course, the expertise of the storyteller and their actually having lived the experience they are talking about, resulted in the officers perceiving an emotional element in the storyteller’s delivery. They felt that receiving an emotional stimulus through the storyteller’s rendition was superior to just reading text.

Emotional impact of the stories.

Officers reported that they were able to observe facial expressions and other non-verbal cues through the video delivery of stories in the storytelling course. This enhanced the learning experience for them. As Ian put it:

> What she’s saying, how she’s saying it, her tone, you can see, you can see that and if something was difficult in what she was doing, you could kind of tell by how involved she was getting and she did a lot of leg work. It wasn’t that she was just, wasn’t just reading what she did, she was actually acting it out where you could see she put some emotion into it. I thought that was good as opposed to just reading right off the thing.

Ian elaborated by stating that not only was he able to empathize with the storyteller, but he could also feel what she was going through to the point of being able to put himself right into her situation, into her position within the story she was relating. This occurred because of the

visual, auditory and other non-visual emotional cues and clues that he observed when watching her video. During the research interview with Ian, it was quite apparent that this had a large impact on him; he was quite excited during his telling of this information.

Several officers noted that emotion had a large impact on their learning. Emotion from the storyteller caused them to sit up and pay attention. As Donald put it:

> But you can tell at points when people get choked up. You know it's really hard for them, it makes you sit back and really consider that this is really important, you gotta listen, you should listen, because it's good sound advice.

Ben expanded the concept of emotion from captivating delivery to include anger and fear. It was his report that neither of these emotions contributed to a good learning environment. He has discovered his own solution to this issue, and uses stories to reduce the effect of these negative emotions on learning while he is working with officers newer than himself. He expressed this creative use of stories in terms of his own emotions: " I find comfort and solace then if someone else says, listen I was where you were, it'll be alright, even if that's not going to cure what you're going through, at least that gives you comfort."

Emotions in delivery combined with visual and audio stimulation served to engage the officers in the storytelling course. Mitch found himself to be paying close attention to the storyteller, listening intently and imagining to himself what it would be like to be in the actual situation being discussed. He introduced the concept of entertainment value, relating this to the visual and audio stimulation he received while watching the storytelling course.

The engagement in the storytelling course provoked the officers to reflect on what they were watching. They characterized this process as being interactive; the stimulated engagement in the storytelling course caused reflection, and they see reflection as interactive; their thoughts interacted with the content presented in it, while their emotions interacted with the storyteller. John stated that stimulation caused him to be engaged, either when learning or in his job tasks:

> I think definitely how I would learn best is just to be stimulated. That's what our job is, we're always on the go, we're always looking for that dose of adrenalin. We jump in the car and go, go, go. Storytelling is a lot more stimulating to me, captures my imagination.

John described the community case study video in the storytelling course as like watching an investigative reporter on a television show, very easy to follow and easy to remain engaged with it. He felt that this presentation captivated him, kept him from straying and losing focus.

Interest in the content of the stories.

The engagement of the officers was enhanced when the content was something they were interested in. This was demonstrated in their responses to the interview questions; several reported that some videos in the storytelling course held more appeal for them than others. For example, Robert felt the community case study video would not apply in his work location as it was specific to the community in which the storyteller worked. Kathy was interested in all three of the videos, as they all touched on content that she wanted to know about.

Interest in the content affected the officer's desire to pay attention, however, the mere fact that the content is delivered by a fellow police officer was reported to be an interest creator

in and of itself. As James put it, when watching a fellow officer on video, "It counteracts that initial barrier to learning, right, people want to just say this isn't applicable." He thinks that interest in content must be generated sometimes, as his fellow officers want to know how the content applies to them, and a fellow officer giving the content is a proper step in creating interest in it. As he continued to state in relation to officers questioning the value of any content:

> I ask myself: how does this apply to me, how can I use this, what can this do for me. In the stories, you have people that you work with, peers that you possibly respect telling you first hand this is what it is about, this is how we use it, this is how I use it, it just makes it more applicable.

Interest in the stories was generated in at least two ways. In the first manner, the story topic was one that the officer already had interest in. In the second manner, the interest was generated through the storyteller, and the officer became interested because he/she formed the opinion that the topic was something that they should be interested in, because of the fact that an experienced officer was presenting it.

Vicarious Experiential Learning through Stories

This section discusses the major theme of vicarious experiential learning. This theme concerns the officers' perceptions of the impact of others' stories on their learning, and includes the sub-themes of experience sharing, successes/mistakes and how the officers enter into the told story in order to understand it. A further review of the literature was conducted subsequent to the emergence of this theme. This review was presented in chapter two.

Officers reported that during their training period they gained a lot of knowledge through their coach officer sharing his or her experiences with them. A coach officer is an officer that

guides the new recruit during the first three to four months of the recruits' training period. This portion of the training is subsequent to training at the provincial Police Academy, and occurs on-the-job; recruits at this stage work in the policing environment directly with their coaches, responding to calls for service from the community and learning and performing the tasks of the front-line police officer. The coach's function is that of teacher and supervisor; the coach guides the recruit through this training period and is responsible for their progress and development.

The knowledge reported to be gained by the recruit occurred when the coaches told stories of their own experiences, what had actually happened to them during specific incidents in their careers. The officers as trainees wanted this information from their coaches, and would ask questions in order to understand the actions taken by the coach officer at the time of the incident. The officers called this informal learning, and saw it as both a way of learning from the experiences of the coach and a way of getting to know him or her.

Experience sharing amongst officers.

Robert reported that, as the coach becomes more comfortable with the trainee, there is an increase in the number of experiences and stories he/she shares with the trainee, resulting in both an increase in experience sharing and an appreciation of the strengths and weaknesses of the coach officer. After the training period, the sharing of experiences performs the same task of getting to know your partner, and helping determine what experiences he/she has had and whether something can be learned from their experiences. The issue of achieving a comfortable level of trust before sharing stories was reported to be important in both the training period and afterwards.

It was Judy's opinion that stories should be shared, including the embarrassing ones, in order that other officers can learn from them and not repeat the same mistakes. She felt that due to her lack of job experience, it was important to ask more senior officers about their experiences and in particular any mistakes they had made. In return, she shares her stories and mistakes with others, in order to help them. As Susan expressed it,

> When I was in my three months police training I felt there was a lot of stories. We would go to one type of call like theft or something similar and I found that my coach would say, well this is what happened in today's situation but he would tell me a story about another time, and we would talk about it. For example, what about if this story was different in this way, what would you have done, or different experiences that he's had. In my opinion, that's what your coach officer is there for, to teach you with their own stories.

Learning from the successes and mistakes of others.

Hearing different stories about the same situation provides the officers with the choice of different solutions. Comparing successes to mistakes helps the trainee understand the different results of action. Alan felt that hearing different stories helped him form ideas of how to perform tasks, as he was able to see how different approaches could result in success or mistakes.

Learning from the successes or mistakes of others gave officers a sense of relief during their training. Ian felt that although an incident may be new to him, the fact that he had heard a story about a similar incident, or in the case of the storytelling course videos, had actually seen someone tell a story about going through a similar experience, gave him a sense of familiarity with the incident, and an ability to incorporate some of the steps that had been taken in the

previous experience. Although the experience is new to Ian, having seen someone else go through a similar one enabled him to borrow on that previous experience and be comfortable while engaging in his. James' view was similar, as he stated that having seen the success of another officer in a particular incident gave him assurance that it was possible to resolve a particular incident successfully. For James, the experience shared was like watching a trail blazed by another officer; a path existed which he could follow.

Telling stories about mistakes had the reverse effect; this created a trail for the recruit to not follow. Officers reported that in the teamwork environment of policing, it was important to learn from each others' mistakes, in order not to repeat them. As well, a mistake can affect the whole team, and it was incumbent upon officers to ensure that no one repeated another's mistake. Alan stated that he learned best from making his own mistakes, and second best from examples of others' mistakes. As he put it, "If it's not your own mistakes sometimes you can learn from others' mistakes. When people are willing to provide that information on their experiences you take the pieces and learn from them as well."

The differentiation between mistakes and successes was apparent in the officers' opinions about their ability to critique the stories they hear. Mitch reported that because policing was so team-based, it was important to reflect and ask questions about another officer's experience, in order to understand their approach. Ben took this further, showing his frustration in being unable to determine which experience was right or wrong; it was his observation that an officer may tell him one way of doing things and a second officer would offer a totally different opinion. He stated, "As a new recruit, it was very frustrating for someone to tell you something and you think that that's what you are supposed to do and then to have someone totally contradict it." These

contradictions over best practices caused him to carefully critique the stories he heard. Ben's primary measure for best practices was to receive a practical example of something that actually worked. He sought experiential stories that were successful in their application, and that also resolved his desire to know why they were successful.

Susan likened the critiquing of stories while learning to that of the critiquing of stories while performing her daily job tasks. In her daily job tasks, she hears stories routinely, and always is cognizant to other sides to one persons' recounting of an incident. She seeks out the other version, and then, as she puts it, she moves to:

> I try to decide on what I think is the truth of the story, or at least I try to determine a clear version of the story based on both people's stories. After that I have to decide what I'm going to do based on whatever story is given to me.

She applied this same approach to her training. Her coach officer would present her with stories from his experiences, and they would critique them together, and in comparison to an incident they had attended on during the training. She found value in hearing different stories about the same type of incident; this helped her develop the skill of critiquing stories and heightened her awareness of the difference in the recounting of the same incident by different people. She observed that this awareness and skill is of critical importance in her daily job tasks.

Ian has observed a pattern in relation to the storytellers themselves. He believes that some chronically tell low-value stories, while others tell high-value stories. Low-value stories, in his view, are stories that contain embellishments on the facts, as opposed to high-value stories that he classifies as truthful and genuine. He relates this to the job he does. The policing profession is Ian's view is about detecting deception, and he applies this skill to the stories he hears. If he

discerns deception or untruths in the stories, he assigns a low value to them. Conversely, a high value is assigned to a genuine, honest story and teller.

Developing the ability to distinguish the value of these stories, and their tellers, is critical is his view, as it was with Susan. He thinks that the best approach is to utilize the information from the high-value stories, but employ it within your own capabilities, put your own personal touch on the methods used. He favours adjusting the method of the storytellers' experience to suit one's own means, as he stated:

> I think you have to because you can't go beyond your means and you can't be something that you're not. If you try to be something that you're not, people are going to see that and I think your credibility is going to come down when they see you act like that. They would think, he doesn't act like that, why is he doing it in this situation, because he learned it? I think you have to kind of tweak your approach, so it looks right and natural for you, and the public can kind of get a sense that you know what you're doing and this is what you would normally do.

Entering into the story to understand.

Several officers reported that the best way for them to critique a story for the purpose of gaining a deep understanding of the event being discussed was to actually enter into the story, put themselves in to the event. Mitch expressed it this way:

> I think that when someone is telling you the story, you put yourself in that situation. You picture in your mind, like, if I was there with you I maybe would have done this or that.

> The story runs through your head, and you put yourself into it and think about what you would do in the story as it is being told to you.

Susan engages in the same process. When watching the story videos in the storytelling course, she put herself right into the situation, and assumed the role of a character in the story. This enabled her to visualize herself being there, and gave her a better understanding of what was being discussed in the story. A further result of being in the story was her ability then to reflect back on whether she would have done things differently in the situation, and what possible outcomes might exist beyond the outcome presented in the story. As she put it, "It's a better way for me understanding what happened because I do put myself in that person's shoes, or that character's shoes." Picturing herself in the story also assisted in her retention of the content of the story.

James felt that putting himself into the storyteller's shoes helped him engage better with the content, and forced him to process the information at a deeper level. He called this an affirmation of what he was seeing in the storytelling course videos, through being in the shoes of the storyteller. By taking that place, he was able to experience the events as the storyteller had, and in relating to the storyteller in this way, the experience of the storyteller became his, and mixed with his own experience and caused him to try to determine if he had had a similar experience in his own past. This process resulted in a deep retention of the story, as he stated: "you put yourself in that situation and yeah, for me it's a retention thing I don't often forget stories."

Donald best summarized the vicarious learning that takes place as a result of hearing others' stories:

> I remember hearing a story about something like the incident I am on, and then I can actually maybe deal with it easier, you know, de-escalate the situation maybe a little bit easier Having heard about it already can make it easier on yourself than to kind of go at it without having any prior knowledge or prior experience because you can experience through others. You can live vicariously through others' experiences, so, having that available to you just makes the incident more easier to deal with.

The Recall of the Content of Stories

This section examines the major theme of content recall using stories. This theme reports on how officers absorb and retain the content of heard stories, and how they play back the stories in their mind in order to make use of the content within their daily work experiences.

The absorption of the story content.

The absorption of content in the e-learning delivery system is strongly related to the engagement of the officer in the presentation and the interest the officer has in the subject matter and the presenter. In relation to the CM delivery, officers felt that they and their colleagues were not absorbing the content; rather, they were just going through the motions of completing the courses to meet the mandatory completion requirement. Engagement during the storytelling course delivery was agreed to be considerably higher.

Mitch used the term entertainment value to express the engagement of the viewer in the presentation. The higher the entertainment value, the higher the engagement. In his view, entertainment was a product of visual and audio stimulation combined with emotional appeal as perceived in the delivery of the storyteller. The resulting engagement of his senses and emotions caused him to pay attention to the presentation, and absorb the content in greater amounts.

Relating to the content was a product of interest in the subject matter combined with interest in the storyteller. The more interest the higher the engagement level, and in Mitch's view, therefore the higher absorption of the content.

The other officers supported Mitch's view on absorption. Susan remarked that the engagement that occurred in the storytelling course caused her to take more away from it, than if she was just reading from a text presentation. As before, she attributed this to being able to put herself right into the story as it was being delivered, a very high degree of engagement, in her view. Alan commented on absorption of content: "People explain what the subject is but when you see those live examples it just helps ingrain it in your brain on what it actually is and how it's applied." Alan also felt that the use of quizzes was of value in his absorption of content. In his case, engagement is achieved through interaction with the material. Interaction can be achieved through quizzes as well as through storytelling.

Ian explained how the absorption was enhanced through storytelling delivered through the storytelling course. It was his opinion that the visual images, combined with the audio language, and the emotional cues of the storyteller, caused reactions in different parts of his brain, resulting in better absorption. Donald felt that moving images, like that of the storyteller speaking and gesturing on the screen, helped to keep his eyes busy and prevented distractions from interfering with his absorption of the content. As a visual learner, Karl reported that his attention was grasped more than would be by just reading text. He stated in regards to the third video of the storytelling course:

> I was definitely focused all the way; it got almost to the point where I didn't want it to end. I wanted to get some more info out of it I thought because they were bringing in their experiences, both good points and bad points.

The retention of story content.

Retention of the content once absorbed was an issue all officers commented on. Mitch felt that the CM delivery style resulted in minimal retention, whereas the storytelling delivery style would result in increased retention. In the CM style, the lack of engagement with the material, combined with the lack of interest results in minimal if any retention of content. In the storytelling style, Donald felt that:

> When you go to a call, something will jog your memory in regards to it. What I really remember is a story. At some point in time, someone had something similar to this and this is what happened. I find it helps me, when I'm doing my job.

He considers the jogging of the memory to be a factor of having something associated to the incident or call he is attending on. He refers to this "something associated" as "something in the back of your mind, so that when an incident like that ever occurs, it can help jog your memory faster." It is his view that memorization of content may serve for retention and regurgitation on a test or quiz, but in the high stress situations of his daily job he needs a mental image in his mind to assist his performance during the incident. This mental image is stored there as a result of hearing and watching stories. It is implanted, and retained for recall, in Donald's opinion, as a result of the impact of the story and the engagement of the viewer in the telling. He believes "that storytelling will always stick in the back of your head."

Karl reports similar views to Donald. From a previous CM course dealing with police pursuits, Karl remembers videos of vehicles (a visual scene) involved in a pursuit termination but does not recall any of the text displayed in the course related to the pursuit termination process. When he tries to access his memory of this course, he can only recall the visuals, but cannot give names for the various termination methods covered in the course. Videos of action scenes like these provide some recall for him, but videos of storytellers as in the storytelling course enhance this effect, as he states: "I can pick up on their physical emotion, everything else and that kind of sticks with you." A storyteller, who is genuine and interested in their story, serves to intrigue Karl more than one who is not really interested in the story they are telling. Displayed emotion and involvement in their story gains Karl's interest, and assists his retention and recall.

Ian suggested that his retention could be assisted through the summation of salient points after the conclusion of a video storytelling. He did not want to be overloaded with facts; he thought it might be best if the stories were summarized at the end in order that his attention was drawn to the main teaching points in each story. As he stated, "And that way you can remember a couple things. I remember the whole story but it's important that I remember the three main points that were done and take that away."

The playback of the stories.

The recalling of stories was referenced by the officers in terms of their ability to play back the stories in their heads. This was often done when they were on their way to a call or incident, or while reflecting on the incident afterwards and critiquing their own performances. John offered an analogy of how his memory worked in retaining content and in the recall of it. He reported that when he watched a football game on television, he was so engaged because of

the visual stimulation and the excitement that he tuned everything out around him. Later, he could recall intricate details of the game, and could play back important plays he had witnessed. Conversely, he felt that reading about these plays would have little effect on his memory of them. Seeing and hearing them embedded the information in his memory, and he could later recall the visual images at will.

Mitch reported that stories just run through his head. He actually does not think about the stories, but rather the stories just play in his head in an automatic fashion. Robert felt that this automatic fashion was a result of a trigger incident. If an officer attends an incident or call that he/she has previously heard a story about, then this connection will trigger that story to be played back in the officer's mind. As he put it, the story "just naturally kicks in". The value of this mechanism was obvious to him. He suggested that if you are at an incident or call that is new to you, if you have heard a story about a similar situation previously, then your recall of it will enable to you have some previous experience to fall back on. If you had not experienced a similar incident before, or not heard a story about one, then you would not be as well prepared to address the incident.

Judy states she is in control of the playback mechanism, and plays back stories in her mind in order to learn from mistakes that were previously made by the storyteller and make sure she does not repeat them. She appreciates the speed of recall of stories. In circumstances where she needs to make a quick judgement, she claims that having a story already in her head permits her to make that quick judgement, reverting to the knowledge contained in the story. Alan acts in a similar fashion:

> You hear different experiences from different officers. Generally you take little things and you keep them in the back of your mind. When you actually are in a situation like that you know kind of what not to do or what to do.

James offers another view on how the playback/recall mechanism works. He feels that stories cause him to process content on a deeper level than other learning methods. In some situations he finds himself thinking "where have I heard this before", a déjà vu sensation. This sensation prompts him to respond by matching the situation to a story he has heard. As a result of this matching, he is able to recall the content of that story, and then employ that content to assist in taking action at the event or call he is at.

The Usages of Stories in Policing

The last major theme to be considered is that of the usages of stories in policing. This theme covers how officer make use of stories both heard and told. The minor themes within include teaching/bonding, safety issues, and the use of stories for learning and sharing.

Officers provided numerous examples of who tells stories, under what circumstances, and for what purposes. They report that they and their fellow officers are always telling stories about their daily experiences. As Ben stated, the telling of stories is "kind of part and parcel with what we do."

Stories as ways to teach and bond.

Stories are told between coach and recruit, between partners, and in off-duty situations. Off-duty, officers tell stories about funny incidents at work, leaving out sensitive detail, for the purpose of sharing insights into their career and the world of policing. Between police officers,

stories are told as a way of getting to know each other, to share experiences, to offer insight into the background of the storyteller, to break the ice in a newly formed working partnership. In the coach and recruit relationship, stories are told for the same reasons, and are also used as a teaching tool by both coach and recruit.

The use of stories as a teaching tool offers insight for the recruit into what type of things and events may happen to them in the future. In the early years of an officer's career, the shared experiences of a coach give a basis of experience and knowledge to help the officer adjust and perform job tasks. Ben stated that the stories of experienced officers enable the recruits to get a footing on the job, in order to have a base from which to "form their own way of policing."

With over one year of experience in policing, Ben now tells stories to less experienced recruits in the manner in which they were told to him at the very beginning of his policing career. He tells them in order to share experiences and to offer insight into expectations. He also tells stories because it is his feeling that the job of policing is hard on new recruits, and he wants them to feel comfortable and reassured during their training. He shares his mistakes, not just for the purpose of helping the recruit refrain from making the same ones, but also to demonstrate that the recruit can survive the making of mistakes, as Ben has done in his career. He wants them to know it is ok to make mistakes, and not get discouraged when they do so. He uses stories of his own mistakes to accomplish this.

Ben is concerned that recruits may be told the wrong stories. As a recruit, he found that he was told contradictory stories on occasion, and he wants the recruits to get the right information. His measure of this relates to the answer to the question of why is this information valuable. He uses this questioning technique to test the validity of the stories told to him, and

believes that this technique is of value for everyone. By questioning the storyteller about the reason for the choice of actions he/she took in their experience, Ben is able to satisfy himself that the story has validity. As he puts it: "You question why you do certain things, but if you give examples and say why it works and this is how it works then how can you really argue with something that's successful."

Stories and officer safety.

Safety issues are of high importance to these officers. Officers report hearing stories from their colleagues regarding incidents where injuries occurred in the performance of their duties, and these stories stuck in their minds. In Mitch's opinion, if a story involved safety issues, it would catch your interest more because safety was a universal concern, as injuries could happen to any one of them at any time. This was linked to learning from mistakes, in Judy's view. While relating that her coach had told her a story about not searching a prisoner properly, she stated:

> He told me what he had learned from that, in order to ensure that I learned from his mistake and that I was searching prisoners properly. He wanted me to make sure that the opportunity wouldn't be given that a prisoner could pull a knife when we thought that he didn't have anything on him.

Safety issues occur within three main categories: physical, professional and psychological. Physical safety relates to the possible physical harm an officer could experience, and the steps taken to avoid it. Professional safety relates to the harm that could result to an officer as a result of failure to abide by DRPS policy, statutes both provincial and federal, and Police Service Act rules and regulations. Psychological safety refers to the emotional impacts

and potential emotional harm felt by the officers as a result of their dealings with unsavoury and distressing incidents.

Stories are used to ameliorate fears and reduce the potential harm in these categories. Stories relating to physical safety are prevalent and sought out by the officers. As Ben put it, he did not need to know how to write or use technology, he, "needed to know how not to get killed on the road, how not to get injured or hurt." This refrain echoed in the rest of the officers' views on the matter. Stories told by officers who have experienced injury have a tendency to ground the newer officers and remind them that they are not invincible, while serving to offer key instructional points on how to avoid mistakes that may have led to the injuries. John expressed a need for more stories told through videos in the e-learning system; it was his contention that not enough attention was given to the issue of officer safety, and that short five or six minute videos on real-life incidents by officers who had faced injury or potential injury-causing situations could relate their experiences for others to learn from. Stories from these officers would help drive the message of physical safety home, in John's opinion.

Officers are faced with issues relating to professional safety. Police officers are governed by federal and provincial statutes, as well as local policies and procedures. A concern was also expressed regarding civil liability issues. The officers stated that hearing stories about situations like how Police Service Act charges were faced or dealt with would give them a better understanding of processes like these, and help lessen the fear of the unknown. John stated, "I don't think they would tell me if they got Police Service Act charges or something like that. We do like to talk about the good stuff."

Psychological safety was second to physical safety as the most important category in these officers' opinion. They reported using stories to deal with this issue. As Kathy put it, when asked if she told stories, "We all do, on the job, I think it's the way to outlet and channel stress and what happened and get things off our back." Ben feels comfort when another officer takes him aside, and tells of an experience where he/she was in the same situation, and everything turned out ok. Ian echoes Ben's feelings on this matter, believing that people like to know of others' experiences, even the bad ones, in order to be reassured that the bad situations are survivable and can be learned from.

For Bonnie, stories are part of her coping mechanism, her way of dealing with the stresses of the job, and she thinks all officers benefit from the use of this mechanism. As she elaborates on this:

> I think it's just a natural coping mechanism for all cops, really, they vent, they tell stories. We have very sick senses of humour on purpose, it's really the only way to cope with things. We`re the only ones that really understand each other, it`s a very unique job.

Donald and Ian both suggested that the use of a humourous story could serve to reduce the tension of the job. In their view, the difficult incidents on the job build up stress in an individual, and the telling of a funny story helps officers decompress. "Maybe a laugh is what you kind of need to deal with the situation," said Donald.

Learning from and employing stories.

The officers all reported that they used stories to learn from. In addition to hearing others' stories and using those experiences to learn from, they would tell their stories to their coach

officer or other fellow officers, seeking feedback from them. As James put it, "You're telling the story just to get feedback, to learn from yourself, strengthen it, looking for their feedback as well as maybe trading off stories, it's just a way to share learning, share experiences." He uses his own experiences to learn from, putting them into story form for sharing with fellow officers, in the hopes of gaining feedback on his experiences. In this way he is able to learn more about both his own performance and other viewpoints that may reinforce his actions or give him alternatives. This is a conscious effort by the officers to take their previous experiences and air them for the purposes of learning and sharing.

Judy provided an example of this. She talked about a case where she was called to an incident where violence had just occurred, and upon arrival was greeted by a very large male person who was in an excited state. She was able to subdue and arrest him without incident, acting alone as other officers had not yet arrived. Upon sharing this experience with fellow officers, she received feedback regarding officer safety and was given suggestions of alternate courses of action to take in future calls. The feedback was in the form of shared stories that demonstrated experiences where actions similar to the ones she had taken had resulted in failure and injury to officers. An alternate course of action was demonstrated, again through shared story experiences which caused her to realize that she had placed herself in potential danger and that a better course of action was available. As she expressed it,

> I arrested him right away but going back and thinking about it afterwards and relating to other officers' experiences I realized I should have gotten him down on the ground before I approached him. That way he would have been at a disadvantage in case he decided to fight. It's things like that, and now, every single time I go into a scenario where I'm

> alone, and even if I'm not alone, if there's that threat that it might go sideways I always get the person down on the ground and their hands behind their back and completely out so they have a disadvantage. I don't even think about it anymore.

Judy's statement illustrates another aspect of the use of stories by these officers. Not only do they share experiences through stories as a way of learning and teaching, but once the stories have been shared, the officers will assimilate the suggestions and content within them into their own responses. In Judy's case, sharing her experience resulted in criticisms of her actions, and suggestions for improvement. She weighed and then incorporated this information and now is in the position where she does not even think about her response when greeted with a threat situation. She has used the stories and experiences of other officers, in conjunction with her own, to decide on a course of action when faced with this type of situation. Kathy echoed this approach, noting that through hearing a story she would observe how a situation was handled by her coach, and then she could decide whether to use this tactic herself in a similar situation.

Summary

This chapter commenced by reporting on the makeup of the participant group, their relation to the broader demographic from which they were drawn, and their division among gender and age attributes. Findings from this group were then discussed through reference to six major themes that emerged during the analysis of the data obtained from the group.

These six major themes that emerged were the environment of the participants, connections to stories and tellers, the affects on learning, the methods of learning vicariously, the recall of story content and the usages of storytelling in policing. Each of these themes was discussed through an examination of the minor themes that existed within them. In total, eighteen

minor themes were identified and utilized as discussion points within the major themes categories.

The following chapter continues with a discussion of these findings in relation to the research questions. Included are recommendations that arise from the findings, and the implications of implementing these.

Chapter Five - Discussion, Recommendations and Implications

Introduction

This chapter provides a further discussion of the findings in relation to the central research questions. The research questions were answered through the data by means of the emergence of six major themes through the data analysis and reported in the findings. Recommendations and implications stemming from the findings are also suggested.

Discussion of the Research Questions and Findings

This study sought to explore the effect of storytelling in a technology-mediated learning environment (TMLE) on front-line police officers during their early years of training and development. The study used a qualitative research methodology in order to address the exploration. A semi-structured interview data collection was used. Analysis of the data was conducted with the assistance of NVIVO8 software.

The research questions.

There were three primary questions and objectives covered in this study. These questions informed the interview guide and the questions within it:

1. What effect does storytelling delivered through a technology-mediated learning environment have on the skills, knowledge and attitude (SKA) acquisition of new front-line police officers? (Effects on SKA acquisition).

2. What are the perceptions of new front-line police officers concerning the effectiveness of storytelling in the on-line environment? (Thoughts about effectiveness).

3. To what use do new front-line police officers employ technology-mediated oral traditions in their positions? (Employing stories for skills acquisition).

The collected data answered the three primary research questions through six major themes identified during the data analysis. These themes addressed the questions in an overlapping fashion. The six major themes are: the environment of new front-line police officers, the connections and relations between officers and stories, the affects of stories on learning, vicarious experiential learning through stories, the recall of the content of stories, and the usages of storytelling in policing. A discussion of how these research questions were addressed by the six themes (shown again in Figure 2) follows.

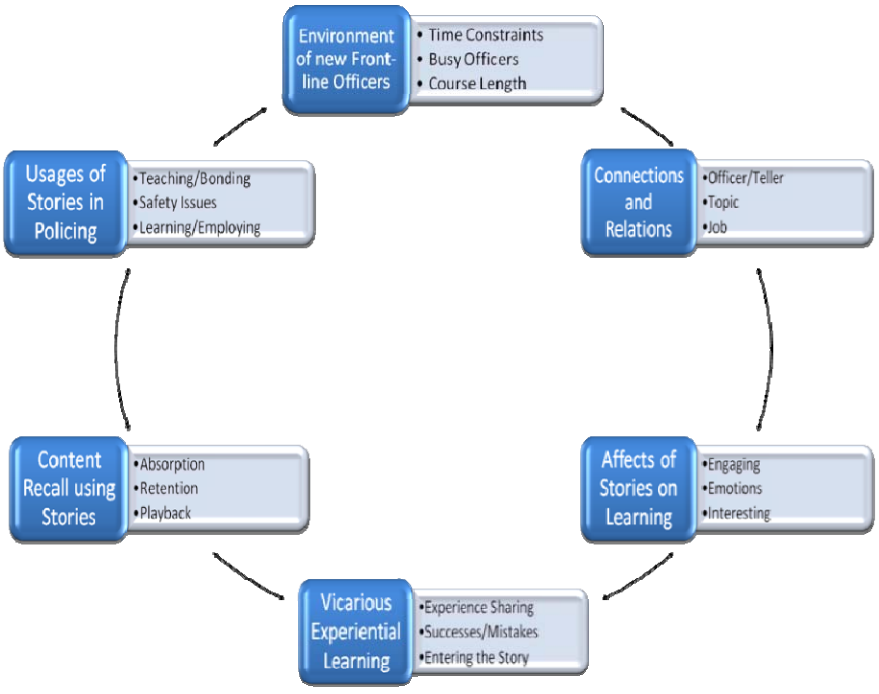


Figure 2. Six major themes from the findings.

Figure 2 is the same as Figure 1 and is reproduced here for reference purposes.

The environment of new front-line police officers.

This theme provided answers to research question number two (Thoughts about effectiveness). The officers described their working environment as fast-paced and fluid. They had little time to spend on lengthy e-learning courses, and were subject to interruptions during their viewing of these courses. Their comments in this regard were driven by their experiences of e-learning courses of the click-method (CM) type as referenced by them. The CM type required them to read text pages presented on a computer screen, clicking from page to page as they finished the reading. Sometimes the text was accompanied by audio voice over which read the content of the text page. Sometimes the text pages were interrupted by brief videos which reiterated the content in the text. Occasionally quizzes followed the reading of the text pages, as a summative evaluation of the officers' absorption of the content. These quizzes provided multiple choice or true/false responses. If the officer selects the wrong answer, he/she could then select another answer until the right answer was selected. Completion credit for the course was achieved upon selecting the right answer for all quiz questions.

These types of courses ranged in length from thirty minutes to two hours. All officers reported dissatisfaction with this type of course, and felt that the learning was minimal. After completing these courses, officers felt that they retained little or no information and that the value of this course type was very low.

A second type of course presentation was used in the storytelling course. The type of delivery in this course was referenced as storytelling, within the e-learning course delivery system of the Durham Regional Police Service (DRPS) during the data collection. The storytelling course was very well received by the officers. All felt that it was very effective for

their learning and much more effective than the CM style of course. The effectiveness of this course was attributed to many factors including the environment of the officers.

In a fast-paced, interrupted environment, short courses that capture the attention of the officers were agreed to be an improvement over previous offerings, and well suited to the officers' needs. Officers recommended that the story length be shortened to five minutes. They reported that they perceived their attention span to be short, partially because of their environment and also as a result of the type of learner they are. They believe that officers are mostly Type A in temperament, which by their description means that they are busy, on the run constantly, and have short attention spans in relation to courses and wish to be moving and not sitting still. Consequently, moving video of a short nature that puts the story across efficiently appeals to what they perceive to be their collective natures, within their environment.

The connections and relations between officers and stories.

This theme also primarily addressed research question number two (Thoughts about effectiveness). The officers reported that storytelling permitted them to make connections with the storyteller and that their attention was increased as a result. They also reported increased attention when they felt the story was relevant to the work they do, and when they had interest in the topic of the story. This interest in the topic could be prior, in the sense that the officer was interested in this topic before viewing the video, or it could driven by the teller themselves, in the sense that if the teller, being an experienced officer felt the topic was important, then the officer viewing and hearing it might be caused to feel the same way.

Seeing a fellow officer in a video presented through an on-line course automatically lent an air of credibility to the story and topic. Officers reported wanting to hear from someone who

performs the same job as they do. This increases their attention, as they both assume that the storyteller has information of value, and they assume that the storyteller has some particular expertise that they can incorporate for their own use.

The affects of stories on learning.

This theme addressed both research question number one (Effects on SKA acquisition) and research question number two (Thoughts about effectiveness). Officers felt engaged by the stories, to the point of stating that they actually entered into the story, taking the place of a character within it, or putting themselves in the shoes of the storyteller. Entering the story was further described as a form of hypnotism, by one of the officers (John). This hypnotic effect stimulated him to engage with the content presented in the story, resulting in ongoing reflection in an interactive manner. For these officers the stories were interactive, although the course did not require any physical activity such as keystrokes or mouse clicks to be performed by them.

This engagement was enhanced by the emotions displayed by the storytellers. Officers reported that observing displays of emotion served to capture their interest, and cause them to give their full attention to the storyteller. The sense of engagement reported is in line with the literature that indicates humans have a natural affinity for storytelling (Hsu, 2008) and that course design using an aesthetic approach to appeal to the learners' wants will better encourage their interest (Parrish, 2005).

Vicarious experiential learning through stories.

This theme provided answers to research question number three (Employing stories for skills acquisition). Officers reported that they make significant use of stories told to them, and

that stories delivered in the technology-mediated learning environment of the storytelling course acted upon them in the same fashion as stories told to them in a face to face environment.

The findings supported the contention that the content resonates with the learners' own experiences (Conle, 2002) and that learners can gain experience vicariously through the experiences of the storyteller (Jonassen and Hernandez-Serrano, 2002). The officers reported this to be the case; they used the storytellers' experiences to augment their own, and integrated these vicariously-obtained experiences with their own as they developed.

Further mention was made of vicarious learning as a way to justify a course of action by an officer. Both Ben and Robert made note that the experiences of other officers, once embedded in their memory, became a base upon which to conduct themselves. Ben in particular critiqued stories prior to deciding whether to embed them, searching for workable solutions for problems he might encounter. His goal when hearing stories was to hear and weigh the outcomes on the basis of their workability, in order that he may use the same approach in any similar situations.

The recall of the content of stories.

Research questions number one (Effects on SKA acquisition) and number two (Thoughts about effectiveness) were both addressed in this theme. Officers reported that the recall of content was directly related to the absorption of content. Absorption of content was dependent on the engagement of the officer in the presentation of it, and the officer's interest in the topic being presented. Absorption then is directly related to the affects on learning of the delivery method. As discussed above, the stories presented through the storytelling course engaged the officers and allowed them to observe and feel the emotion of the storyteller. This engagement resulted in the officers becoming interactive with the material, and permitted them to enter into the story,

placing themselves into the shoes of the teller or another character in the story. This process had the affect of embedding the experience into the memory of the officers; absorption of the content was reportedly widespread and deep.

As absorption was deemed to be thorough, retention of the content was also reported to be high in relation to stories that had been heard throughout the training period of the officers. The officers made reference to stories that they had heard in classroom instruction prior to their field training. They also vividly recalled stories they heard during field training from their coach and other officers.

This retention ability permitted them to recall these stories at will, and play them back in their minds, in a visual fashion. The officers reported being visual learners, as a group, and reported that the stories played in their minds, as a movie did, even after a substantial period of time had elapsed. The effect of storytelling on SKA acquisition is quite strong, and the officers reported that they were well aware of this effectiveness and in fact used it to their advantage.

The usages of stories in policing.

This theme primarily addressed research question number three (Employing stories for skills acquisition). The officers reported that stories were used for teaching, learning, bonding, and particularly for the messaging of safety issues, which were comprised of physical, psychological and professional categories. Stories are also used to reduce fear during their training. Storytellers use stories about their mistakes in order to demonstrate to the recruit that mistakes can be survived and learned from.

Stories were reported as a way of sharing content, the content being the experiences of the officers telling them. The use of storytelling places the content into a context that the officers report being able to relate to. The officers see themselves reflected in the storyteller, when the storyteller is a fellow officer and shares similar experiences. The reflection that takes place as a result of this connection enables the officer to incorporate the experiences of the storyteller into their own practice, after performing a process of critique of the story and review of the officer's own experiences. The content of the stories then merges with the officer's own experience to become part of the routine working method of that officer.

Observations regarding the findings.

The findings as reported covered the territory from the environment of the participants through the connections and usages of stories by this group, and considered the affects on learning and recall. Through this journey, a number of observations can be made.

1. The environment of policing contains time constraints that hamper some traditional methods of instruction.
2. Officers work in a fluid and high-paced environment, and have attention spans that match the quickly changing daily nature and requirements of this environment.
3. Technology-mediated learning meets some desires of officers in that it is available to them on a needs basis, consistent with their time and ability to receive it.
4. Officers want technology-mediated learning that is more meaningful to them, and permits them to absorb, retain and use the experience and content messaged through this learning.

5. Stories presented in a certain manner meet the requirements of engagement and interest and promote the retention of content.
6. Officers use stories in their learning, and hear stories in their job tasks on a daily basis.
7. Officers want storytellers from their own ranks. They wish to hear the experiences of fellow practitioners.

Research Question Number Three

Of the three primary research questions in this study, question number three evolved as the most interesting question: to what use do new front-line police officers employ technology-mediated oral traditions in acquiring the skills for their position? This interest arose as a result of the question itself being viewed in different ways as the analysis was underway and efforts were being made to address the question by way of the findings. Consequently, much effort was expended in analysis of the data towards the goal of determining answers and findings related to this question.

At a macro, surface view, the question can be understood to solicit the practical usages that officers make of the stories told through the technology-mediated learning environment. For example, do the officers refer to the stories when determining their actions? Do they use the stories as a base for further research and learning? Do they critique the stories, in line with their own experiences? These, and other similar questions, were considered in the previous discussion in chapters five and earlier in this chapter.

However, an underlying and perhaps deeper understanding of this question provoked an interest in determining whether or not there is a process or mechanism at work when the officers

access the stories and use them in their job tasks. What is this mechanism, and how does it work? How might it be adapted for use with other technology? Answering this type of question requires an examination as to whether an underlying mechanism exists, and an illumination of what it might be.

Towards Developing Further Conclusions about the Data in Response to the Questions

Glesne (2006), Richards (2005), Bazeley (2007) and Davies (2007) support the effort to develop local conclusions and theory as a result of an exploratory qualitative study. Rugg and Petre (2007) caution the novice researcher to not attempt to explore beyond the means and skills that they possess, and to ensure that any conclusions reached are based on a valid and accepted process of analysis. With both this encouragement and caution in mind, this chapter will seek to make small steps towards localized conclusions from this study, proceeding at first from a discussion of the process of data analysis that was undertaken.

The Process of Analysis and Validity Testing

Coding was done within NVIVO8 software, starting with a broad-based coding that yielded forty-six free node categories. Through the process of data reduction the free nodes and their data were reviewed and amalgamated into tree nodes which build on six major themes. The data was again reviewed for its fit to the themes after this primary reduction process was complete. The writing of the findings in chapter five provided yet another check on the fit of the data and its coding categories to the themes that emerged. Writing about data is a way of testing and analyzing the data (Richards, 2005).

Through the analysis and the chapter writing process numerous reflections and ideas for consideration were noted within a diary journal and individual memos linked to the nodes. These

reflections and ideas were later tested through the use of coding and text queries. This process advanced to coding on code for the purpose of constant comparison of the data and confirmation of the themes suggested (Richards, 2005).

Modelling and reflection were ongoing, along with the coding queries and memo and journal writing. The outcomes and conclusions from this process were then tried for their fit to the data, the final arbiter of whether the conclusions have any validity or not (Richards, 2005).

The Emergence of an Early Metaphor

During her interview, Susan made repeated mention of putting herself into the story as it was being told to her, in the context of putting herself into the shoes of the storyteller, or that of a character, as she put it. She also repeatedly compared the process of learning through stories to the job of policing. It was her suggestion that the job of policing is all about hearing stories, and that there might not be much difference between hearing stories in the field during policing work and hearing stories in the role of a learner. This suggestion was noted at the time and became the subject of further analysis as the research continued.

Statement of the metaphor.

The simple statement of the early metaphor is: Policing and (police) training are alike as they both incorporate learning through stories. The understanding in this metaphor is that policing job tasks involve the hearing of stories, understanding what happened, and taking action as a result. Similarly, training involves the hearing of stories, incorporating the experiences of the storyteller, and utilizing this knowledge for future action. In other words, the actual job tasks of policing are similar to the tasks involved in learning: policing is all about stories; stories are all

about learning, “policing as learning”. This association can also be expressed in this fashion: policing is related to stories; stories are related to learning, policing is related to learning.

Testing for the validity of this metaphor.

The data was further examined for evidence of this metaphor. The participants were quite adamant that their work involved the hearing of stories, as Kathy put it, “I think that’s what this job is all about, the experiences, the stories, what’s happened to them.” Their understanding of the primary function of their job was the hearing of stories from people who called for police assistance, and understanding that there are different perspectives offered on any incident. As Karl expressed himself, it is his job to sort through the different perspectives and make a determination about what occurred in the incident.

Susan expresses both the matter of different perspectives and the learning process in this fashion:

> I’ve always been told this that there’s one person will tell you a black story and one person will do you a white story and the truth is some gray in the middle. It’s just kind of common sense, and your experience on the road will tell you. You learn how to read people and learn to believe or not to believe what people are saying.

Her understanding of the process is to weigh the different stories she is presented with and, based on experience and her learned ability to read people, make a determination about what occurred in the incident she is investigating. The process in doing so is similar to the process during training of learning through stories, either in face to face conversation with

another officer or delivered through a technology-mediated learning environment, in her experience.

Her experiences were widely shared in the participant group. Several made mention of learning how to weigh stories heard both in training and in the field. All expressed this as a learned ability, and stated that their job relied heavily on this skill.

The impact of the metaphor.

Metaphors can also be useful in the path towards developing conclusions and theory. "They can convey patterns that connect findings to theory; they may have a richness and complexity that allows you to see new theoretical possibilities" (Bazeley, 2007).

Support for the concept of learning metaphors in organizational use is found in Vakkayil (2008). Learning metaphors can be discussed across disciplines and the use of metaphors such as "learning as computing" and "learning as connection" may be helpful for understanding learning within the policing organizational context. Within this context, perhaps policing can be thought of as a learning process, for example, the metaphor of policing as learning.

The Emergence of a Later Hypothesis

A closer examination of the early metaphor resulted in reflection that served to reduce it into its component parts. These component parts are expressed as

1. Policing as learning through stories (policing as learning)
2. Training as learning through stories (story-based training).

An analysis of these component parts was conducted to check for their individual validity based on the data. In this analysis there emerged early suggestions of a process that was similar to each component.

From metaphor to hypothesis.

As coding and analysis of the data was underway, it began to appear that the officers were describing a process that they went through when using stories to learn. In-vivo coding of specific text phrases such as "enter into the story" and "put yourself into the shoes" collected data references from the thirteen source interviews. These data collections were further read and reflected upon, and it was determined that support existed for the observation that officers were describing a process.

This process was most often referred to when the officers were talking about the use of stories in coach and recruit interaction. Further attention was drawn to this process, and detailed analysis of it was undertaken, commencing with text searches in the NVIVO software database followed by advance coding queries. This resulted in an observation of the process involved in learning from stories as reported by the participants.

Statement of the hypothesis.

The hypothesis simply stated is that a mechanism exists when officers use stories in their practice as front-line police officers. This mechanism operates after the content of the story has been absorbed and retained by the officer and is based on that absorption being complete. It follows the basic learning cycle (MacKeracher, 2004) process of:

trigger – connect – recall – synthesize – act

where trigger is an incident or event that the officer responds to, and connect is the connection of the context of that event with a similar context within the memory of the officer. The officer recalls hearing a story of the experience of another officer, the context of which is similar to the context in which the officer finds him/herself requiring a response. The officer in recalling the story synthesizes the content of it with the existing contextual content he/she is currently in and takes action.

Testing for the validity of this hypothesis.

The hypothesis was tested through the data, using coding and text queries to determine the extent of its relevance and applicability. I decided that the hypothesis had utility as an explanation of what the officers were saying in relation to how they used stories in their practice. Several officers noted the process, and used the concept in explaining how they used stories. For example, James described the process as commencing with a déjà vu sensation. This sensation prompts him to respond by matching the situation to a story he has heard. He then recalls the story content and employs that content in the incident he is at.

Bonnie made reference to stories as being easier to remember as they fit into a pattern. It was her contention that, if you use a story to teach content, the content will be remembered better because a story fits into a pattern that people remember. The pattern is sequential in nature, and she believes that the characteristics of these story patterns cause better memorization of the content because they are easier to follow when told than just attempting to memorize bullet points.

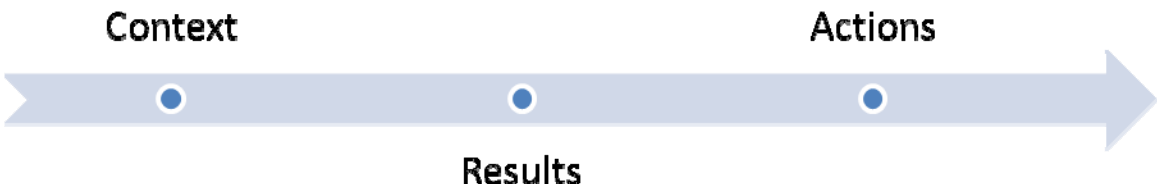
Impact of the hypothesis on the metaphor.

The component parts of the metaphor are "policing as learning" (PAL) and "story-based training" (SBT). In PAL, within a given context, results are known and the officer must decide what actions produced them. In SBT, a given context is asserted by the storyteller and the experience of his/her actions produced a given result, all of which is relayed through the telling of the story. In SBT, the content of the storyteller's experience is given to the learner, and can be expressed as:

given a context (C), this course of action (A) produced this result (R).

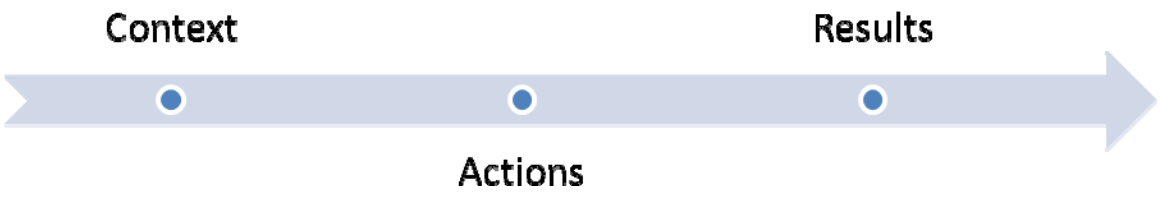
In PAL, two types of applications exist. In the first type, the officer responds to a context (C) where results (R) are known and observable, but the actions (A) that produced the results may be unclear and may reside in conflicting stories presented to the officer. In this case, the expression would be:

given a context (C), that produced the observed results (R), solve for the actions (A).



In the second type, the officer is required to perform some action(s) in order to achieve desired results. This can be expressed as:

given a context (C), determine the actions (A) required to produce results (R).



Towards a Localized Theory about the Use of Stories by these Officers

The mechanism of learning through stories is similar to the mechanism by which officers assess and compare the validity of stories heard in the field in relation to their policing tasks, according to the participants of this study. The officers reported widespread use of stories that they had heard in order to conduct themselves in job tasks at incidents that they had little or no previous experience with.

The impact of the hypothesis on the metaphor caused reflection upon whether a mechanism operated within the metaphor and/or within its component parts. The result of this inquiry yielded observations in support of a localized theory regarding a mechanism by which the officers use stories in their practice.

In SBT, in a given context, action yielded a given result, as expressed to the officers by a storyteller. In PAL, when the officers are now performing job tasks at a specific incident, they must determine what action produced the results that are observed at the incident they are attendant on, and/or make a determination of what actions they themselves must take to achieve a desired result. Matching the context of this incident with a previously-heard story, the officer uses the experience of the storyteller to provide information about what action took place. In a like manner, the experience of the storyteller directs the officer on what action to take, within that given context.

The story provides the officer with the experience required either to determine what action to take, or to determine what actions (A) caused the incident at hand. The story is the experience base for the officer, enabling him/her to solve for (A) within the PAL context.

Statement of the Theory

The theory that arose from this analysis is that the learners make use of the heard stories in at least two ways. Often they will replicate the actions detailed in the heard stories to produce desired results within the context they find themselves during performance of their job tasks. The second primary usage is as a reference point to determine what has occurred when attempting to evaluate the truth of the stories they hear in the field. In summary form, the actions detailed in the heard stories become either the actions taken in the field or are used to provide the guide to determine what actions occurred in the field. The story actions either become the field actions of the officer, or become the officer's guiding device for measuring actions in the field.

Visually, this theory can be expressed as incorporating both of the following processes in the description of how these officers make use of stories heard during training:

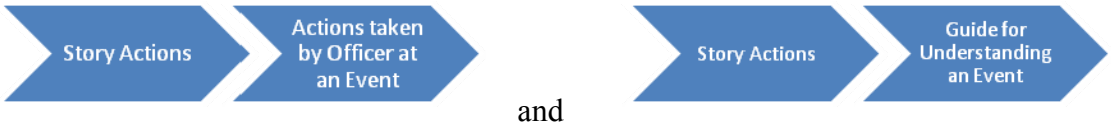


Figure 3. The use of heard stories by officers.

Figure 3 shows the two types of processes reported by the participants. In the process on the left, the actions relayed in the heard story become the actions taken by the officers in a real-life event. In the process shown on the right, the actions in the relayed story become a guide for the officer to use in understanding a real-life event.

The theory can be expressed in such a way as to include the element of time. The story heard by the officer as a past event becomes a current event when put into use by the officer. The heard story of the past becomes retold in the present, through the actions of the officer.

Placement of the Localized Theory

Clandinin and Connelly, (1989, p.4), assert "...that one of the basic human forms of experience of the world is as story...", and, "... that the storied quality of experience is both unconsciously restoried in life, and consciously restoried, retold and relived through processes of reflection...". This restorying of stories has been observed to take place within the officers who participated in this project. The theoretical finding that officers use the stories heard during training in such a way that they retell them through their actions during their job tasks, is consistent with the assertions of Clandinin and Connelly.

Connelly and Clandinin (1990) liken the study of narrative to the study of how humans experience the world. They believe (p.2) that "...humans are storytelling organisms who, individually and socially, lead storied lives." They characterize narrative as both phenomenon and method, meaning that narrative is the experience to be studied, and that it also forms the patterns of the methodology of inquiry in that study.

The findings of this research project follow this dichotomy of phenomenon and method in relation to narrative. Policing viewed as a learning process, has narrative as its object of study. Stories viewed in the context of training use narrative as a methodology to effect the training purpose.

Relation of the Theory to the Local Context

Figure 4 (below) depicts the processes involved within and the relationships between the major themes found in this study. In the centre, four of the major themes are shown to be interactive with each other, in a complex non-linear relationship. These four themes interact with each other, in a manner similar to the basic learning cycle described earlier (MacKeracher, 2004). On either side of the centre are the major themes of environment and usages. The environment impacts on the centre, and the interaction in the centre impacts on the usages, in a linear fashion. The bottom arrow shows a feedback type loop, depicting feedback from the usages of stories during events back to the environment of the officers, feeding the process again. The top arrow allows for depiction of a direct influence of the environment on the usages of the story content while suggesting a circular flow to the process in its entirety.

Viewing the local theory as a system illustrates the linkages between the six major themes and the developed theory. The theory can be seen as the process of linking the environment of the officers with story content usage through the mechanism of a central learning cycle that utilizes storytelling.

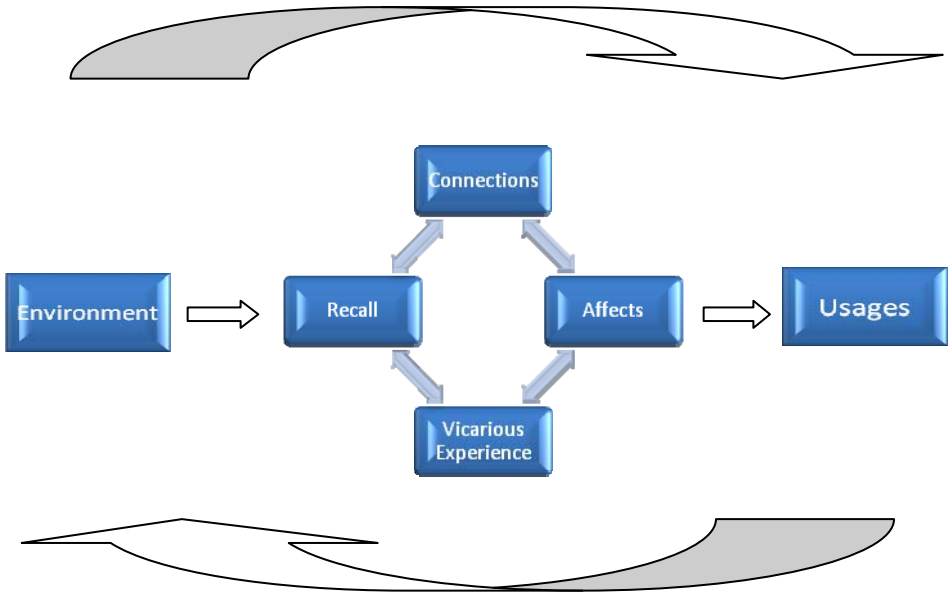


Figure 4. Relation of the theory to the local context.

Importance of this Theory in the Local Context

If the theory is valid as a workable explanation of this process, then an examination of the methods used by police to assess and compare field stories would yield data that would help explain the process of learning through stories. It also provides an explanation for the affinity officers have for stories, in conjunction with the findings discussed above in chapter five. Stories affect learning in such a manner that the perception of absorption and retention is greatly improved through their use.

Another component of the affinity lay in the ease of use. The officers report that they neither have to memorize numerous details or facts nor do they need to carry a large amount of written resource material. This is possible in those circumstances where a story has become embedded in their memory and it can be connected to an incident in their job tasks.

Another important aspect of this theory relates to the speed at which the process is utilized. Under certain circumstances, the time spent in the steps from connection to a previously absorbed story to action on it is miniscule. As Susan noted, in emergency situations there is no time to think consciously about a course of action. Thinking must be instantaneous and action taken; reflection occurs later. The theory has value in this understanding by emphasizing the importance of the proper story embedding. It is imperative that the stories absorbed express the proper actions if they are to be used in contexts where there is limited or no time for prior reflection.

Relation of the Analysis to Research Question Three

Securing detailed and in-depth answers to the third research question "to what use do new front-line police officers employ technology-mediated oral traditions in their positions" prompted a determined ongoing analysis of the data from the participants in this study. The macro response to this question showed that there was no difference in use between stories heard in a technology-mediated learning environment (TMLE) and those heard in a face to face environment. In both cases, officers processed them in a similar fashion, and welcomed the inclusion of a question and answer discussion in the TMLE in order to simulate that which took place in the face to face environment.

An attempt at a deeper understanding of this question caused an exploration into whether an underlying mechanism or process was at work when officers use previously-heard stories in their practice. The data suggests that there is such a mechanism, and it operates in the fashion that stories serve to give officers experience for an incident in the absence of any previous experience. Officers examine a context in which they find themselves, then connect that context

to a story they have heard. As a result, the officers take action using the story experience and action to replace their own lack thereof. When trying to sort through the stories being told to them in the field, officers use the same process; they revert to previously-heard stories as a reference point in order to make sense of the stories being told.

In story-based training of the type the officer received through technology-mediated storytelling, the officer is given the context, actions and results that were the experience of the storyteller. In the field, the officer is greeted with context and results, and needs to determine what actions have occurred and/or what actions to take. In this process, the actions of the previously-heard story become the actions taken in the field, or are used to understand what actions produced the results observed.

Recommendations

This study was not conducted for the sole purpose of making recommendations; rather, it was conducted as an exploratory study into providing answers to the primary research questions. However, the findings in relation to these questions suggested some areas for consideration for the future development of e-learning courses within the DRPS system and for the use of stories within them, along with possible implications relating to their adoption. Six recommendations are suggested in summary form.

Reduce course length.

All officers reported that competing time demands in their working environment required that courses be kept to a minimum length. Video story length suggestions ranged from five to seven minutes at a maximum. In the storytelling course the stories were from seven to twelve

minutes, and several officers reported that the longer the story the harder it became to remain focused due to the competition for their time.

Choose topics and storytellers that officers can relate to.

Officers reported that only storytellers with credibility in the profession and expertise in the area on which they are speaking should be used. For maximum interest, topics that assist the officer in their daily job tasks should be used. All officers reported wanting to hear stories from a fellow police officer as opposed to stories about policing from non-practitioners.

However, where the content is a topic that the officers may consider undesirable or unnecessary, the story-based delivery method does work to decrease their resistance to the content and increases their acceptance of the need to review it. The officers will identify with one of their own, and listen to that person even if the content is not considered of high value by them, provided the storyteller is genuine and has experience in the topic being delivered.

Increase the use of stories in e-learning courses.

All officers reported liking and benefiting from the use of stories as a delivery method in the e-learning course system. It was recognized that stories may not always be appropriate to the topic of the course, but where appropriate, the use of stories is preferred over the use of text as in the traditional click method of delivery.

McQuiggan, Rowe, Lee, and Lester (2008), in an early study of narrative based learning demonstrated that learning gains were achieved in an online environment through this approach, but the gains were less than those achieved through traditional methods. However, "... the motivational benefits of narrative-centered learning, particularly with regard to self-efficacy,

presence, interest, and perception of control, are substantial" (p.9). Their study was a controlled experiment on grade eight students, and, as they noted, even with increased interest little research has been done to date on the effect of narrative based learning environments.

Explore best practices for the use of vicarious experiential learning.

This recommendation comes about as a result of officers reporting that they both use and like the use of stories in e-learning courses while at the same time they also have an appreciation for the inclusion of quizzes and other testing methods within them. As Bates and Poole (2003) note, video is a good way to present cases, but there is a place for text and audio in the interpretation and analysis of the cases. The officers in the study also stated this, suggesting that the stories be combined with other methods to achieve a fuller effect.

This fuller affect can be achieved, in the officers' views, by continuing to utilize quizzes and summaries during the story-based courses. These activities would augment the videos, and provide officers with the opportunities to reflect on the content and test their own knowledge of it.

Use testing to imbed content.

Officers suggested that a testing of the content delivered in stories be included in any future courses. They felt that the testing stimulated a deeper thinking on their part, forcing them to try to understand why the storyteller took the action he/she did, and decide whether this is something the officer would choose to do. They believe that the use of testing in the course helps to prompt a critiquing of the content of the story and this in turn helps further embed the content in their memory. However, changes to the course must be made in order to remove the ability to click directly through to the right answers, thus circumventing proper testing.

The testing process in the on-line environment mimics the process that the officers report occurs with their coaches during their recruit training period, in the face to face environment. The coach will share an experience with them, and together they will discuss it, critiquing it and determining the value of it for future use. A testing process in the on-line environment should be structured to mimic this face to face process. For example, pausing the story at critical junctures and posing reflective questions to the viewer could offer the opportunity for this process to occur. Placing a quiz at this location would also provide for a critiquing and interactive process. Video length could be adjusted to fit this process, increasing the total length on any one subject but showing short clips less than five minutes in length before posing reflective questions in text.

Determine best use of stories for shaping attitudes.

Ford (2003) suggested that the use of stories by experienced police officers had a tendency to promote and perpetuate a police culture that may not be in the best interests of the organization. It was his suggestion that stories be reviewed in order to ensure the values of the organization are passed on to new police recruits. Reviewing stories that are delivered face to face in closed environments (e.g. inside a police car between recruit and coach) is difficult. Reviewing stories that are to be delivered in a technology-mediated learning environment is simpler. This recommendation would require story selection and content to be screened to ensure that the values of the police organization are promoted in the telling.

Implications

This section will briefly discuss some implications of acting on the above recommendations. Four main implications are mentioned.

Proliferation of courses employing stories.

A proliferation of the use of stories in courses will result in an increased need to properly select storytellers and topics, assist in scripting the video, and an increased need to screen the message being delivered. Pilot testing of the videos would also likely be advisable. All these efforts would be labour-intensive.

This proliferation may result in a large bank of stories being created to address the numerous topics of interest that policing covers. More courses using stories could also have the deleterious effect of reducing other means of learning. As the officers noted, storytelling can be used to enhance the learning in online courses, but should not totally replace quizzes and testing and other forms of delivery of training. The stories should be used where appropriate, but are not appropriate to all training needs.

Selection of storyteller and topics.

Strong effort should be put into selecting the right storytellers, and matching them to the topics they present. It may be advisable to conduct research on the topics deemed to be most important to field officers and then match storytellers to these topics.

The officers reported that they would have difficulty learning from a storyteller that lacked credibility in their eyes. Credibility was used to describe the storyteller's experience, reputation and expertise within the DRPS.

In attempting to meet the organizational goal of promoting internal values, while addressing the issue of storyteller credibility, perhaps a storyteller selection process could be chosen that parallels that used to select excellent officers during the research into Gold Medal

Policing conducted by McDonald (2006). In this study, McDonald identified excellent officers to interview through a process that relied on peer and supervisory recommendation.

Directing and scripting of courses.

A change in e-learning methodology in the DRPS system may require changes to the way in which scripting and directing of the courses occurs. Ensuring the appropriate video story length is maintained, while ensuring the correct value messages are being communicated will likely require close attention to scripting and necessitate taking a director-type role in the video-taping of the stories. This may require staff training to adapt to this changing role, and may result in a more lengthy process for course development than at present.

Cost analysis.

Increase in the use of stories within DRPS e-learning courses will result in increase in the amount of labour devoted to scripting, recording and editing by the development unit, as well as increased demands on finding and using storytellers, topic research and piloting. These soft costs may result in no demonstrable increase in total costs, as the personnel are in place to conduct these tasks. In the case of the e-learning development unit, a shift from audio and text based methods to story-based methods may range from no increased workload, to possibly a longer development time per course created, if the experience follows that a story-based course takes longer to create. However, it is possible that costs could increase and a fuller cost analysis of this may be advisable before proceeding. At this time there is no definite answer to the costing issue; it will be necessary to gain experience in the creation of story-based courses in order to estimate the increase in production costs, if any.

Summary

The research questions were answered through the emergence of six major themes from the data collected from the participants in the study. These themes revealed that officers wanted meaningful learning delivered through the technology-mediated learning environment of e-learning courses in the DRPS system. To them, meaningful learning means stories delivered by fellow officers sharing their experiences about matters of mutual interest and based on job tasks that the officers face. Recognition of the busy work environment of the officers is critical, in order to match the time available for learning with the course length.

The theoretical discussion of the findings suggested that they are consistent with previous work in the area of narrative method and inquiry. Narrative is both method and phenomena, as found in this research project in relation to the narratives used during training, and the narratives studied in the officers' fieldwork. This is consistent with Clandinin and Connelly's (1989) assertions of the duality of narrative. This research project also found that stories were restored, in the sense that officers used them as a base for their own actions in the field, consistent again with the restoring of narratives suggested by Clandinin and Connelly.

Recommendations regarding these findings centre on meeting the desires and environment of these officers, by making more widespread use of storytelling as a learning method within the DRPS e-learning system. The officers find high value in its use, and maintain that their interest in the content and the retention of it is much increased through this method.

The cost of pursuing this route may prove to be negligible as regards equipment or personnel increases and can possibly be absorbed within the current structure. It is recognized that proper detailing and scripting of these courses may require a lengthier time to produce, due

to the greater attention placed on locating a storyteller for the topic under consideration, along with proper scripting of the story in order to ensure standards and course lengths are both met. The latter points may suggest resultant cost increases; however, it is not known the extent, if any, of these at this time. Further story-based course development experience will be required.

Chapter Six – Conclusions

Synopsis

This study points to the high value of stories as a teaching tool within policing and demonstrates that the affects of stories delivered through a technology-mediated learning environment (TMLE) mirror the affects of stories delivered through face to face contact. There are efficiencies and benefits through the former delivery system. The working environment of the officers is such that the constraint on their time requires a conciseness of learning and content delivery that can be well-addressed through a TMLE.

The analysis leading to theoretical observations and assertions has served to further highlight the value of stories, and suggest possible avenues for further exploration and implementation. If story actions become field actions and/or measuring devices for interpreting field actions then more attention should be paid to them. If stories carry this much import into police practice, then more research and more applications of them are suggested.

Perhaps the greatest benefit of the use of stories delivered through a Police TMLE lay in the control of the consistency of stories that can be delivered. In the face to face interaction, there is little or no control over what a newer officer is told. In the TMLE, stories can be picked and edited prior to delivery, in line with the organization's goals and mission. This benefit can serve to address the concerns of Ford (2003) that perhaps the wrong stories are being told to recruit officers, and ensure that a highly desirable culture is being instilled in them from the onset of their careers.

Suggestions for Future Research

Into police job tasks regarding the hearing of stories.

This research started from the perspective of the training and learning side of policing, and perhaps further examination from the field policing side is warranted as regards the use of stories as learning and practice mechanisms. As problem-based learning started in medical training where the case study approach became the teaching approach (H. Barrows, as cited in Cleveland & Saville, 2007), perhaps an equivalent for policing would be the story-based approach becoming a more wide-spread training approach.

Additional research into the policing tasks that involve listening to stories would be beneficial in developing further understanding of the learning/training process. It would be of interest to examine closely the process that an officer undertakes while performing the listening and weighing tasks associated with this function.

The impact of demographic variables would also be of interest for research. Varying presentation styles, content and context would all be valuable for determining best practices for story-based training. The evaluation of content retention levels through the use of stories in training as compared to content retention through other delivery methods may be worthy of a quantitative research project.

Just in time devices.

Driscoll and Carliner (2005, p. 212) suggest the use of mobile devices to "...deliver training at the point of need, situated learning, by providing just-in-time and just enough learning." This type of device may be appropriate to the environment of the participants in this

study. Further research on its application, suitability and desirability by the officers may be valuable. These devices could employ video or audio storytelling, and research on the utility of audio devices for this purpose may also be called for.

Willingness to share experiences.

It was noted previously (p.67) that officers felt it was beneficial to share stories about both good and bad experiences. It was also reported that a comfortable level of trust was required before an experienced officer or coach would share their stories. The issue of comfort and trust may also arise in the recording of stories onto video by experienced officers. Would officers be comfortable in recording an honest account of their experiences, knowing the recording would be kept for training purposes? This issue is unknown and not covered in this study. Future research into this may be required.

Continuing effectiveness of the connections to the storyteller

Continuing effectiveness of the connections to the storyteller may be an issue as an increased usage of stories and tellers may reduce the likelihood that the storyteller is known to the officer watching the video. The officers in this study reported that knowing the storyteller provided the advantages of credibility and offered the opportunity to contact the teller after viewing the story. If the teller is not known to the officer, would these advantages be lessened? This may be a subject for future research if the recommendations are adopted and the use of stories in police training proliferates.

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Appendix A – Overview of the Storytelling Course

This appendix provides an overview of the storytelling course referred to in this study. The differences between this course and the traditional course delivery pedagogy will be discussed. Screen captures of the two types of courses' learning objectives are included at the end of the chapter, and form the basis for the discussion of the difference between the two design objectives.

Introduction

The course is e-learning delivered and entitled "Voices from the Field". It is approximately thirty minutes in length. It is distinguished by its different delivery method: traditional courses in the Durham Regional Police Service (DRPS) technology-mediated learning environment (TMLE) have consisted of text with audio or video voice-over, a primarily tutorial style. This course delivers content through narrative delivery (storytelling) in video format with text used only sparingly in the introductions. The course takes the different approach of content delivery via narrative (storytelling). Narrative is used synonymously with story-telling in this study. Thus the course makes use of storytelling to deliver content as opposed to the traditional method of the display of text and the reading of it.

The subject-matter of the content is based on police problem-based learning methodology, or PBL. PBL is both a conceptual learning method and a problem-solving tool being introduced into the DRPS as its primary strategy for recruit training and community problem-solving (DRPS, 2008; Cleveland & Saville, 2007).

Goals of the Storytelling Course

The goal of the storytelling course is to present content in a distinct (from traditional) manner to the learners. I examined the views of the project participants on it after they had completed it. I looked to determine the following:

- Do the learners have a preference between the delivery methods?
- How do learners use storytelling to acquire the knowledge to perform their jobs?
- What is the impact of storytelling on engaging learners in the learning?

Design

Traditional delivery methods in the DRPS TMLE have knowledge transmission as their core pedagogy. The storytelling method course deviates from this pedagogy by adopting experiential transmission as the core pedagogy. A summation of the underlying philosophies of the two methods is presented in the following table:

Table 2. A comparison of traits between a traditional text-based course and the storytelling course.

Trait	Traditional course	Storytelling course
Learning theory	Cognitivism	Constructivism
Pedagogy	Transmission of knowledge	Transmission of experience
Methods	Text/audio/video presentation of concepts	Audio/video presentations of real-life experiences
Aesthetics	Conceptual placement	Contextual placement

This summation draws on the literature review presented above for placement of the key terms and concepts in the relative categories for the two methods as well as Figures 7 and 8 below which address the learning objectives of the two different approaches.

Videos

This presentation consisted of three videos ranging in length from seven to twelve minutes. The videos were of DRPS officers relating their experiences with projects and exercises relating to the training and usage of problem-based learning methodology. One officer told her story of her efforts to conduct a problem-solving initiative within her community while in her training period. Two officers together told their story about their experiences with the patrol training officer program, a new recruit training program based on problem-based learning principles. One officer told his story about his team's effort to address a problem within his community, using the problem-solving methodology he had been taught.

The video topics and properties are shown in the table below (in the order that they appear in the course).

Table 3. Descriptions of the three videos in the storytelling course.

Video	Topic	Officers delivering	Length (minutes:seconds)
1	Neighbour park problem	One	11:30
2	Training officer experiences	Two	12:30
3	Community case study	One	7:50

The delivery style of these videos is best displayed in the following screen shot from the course:

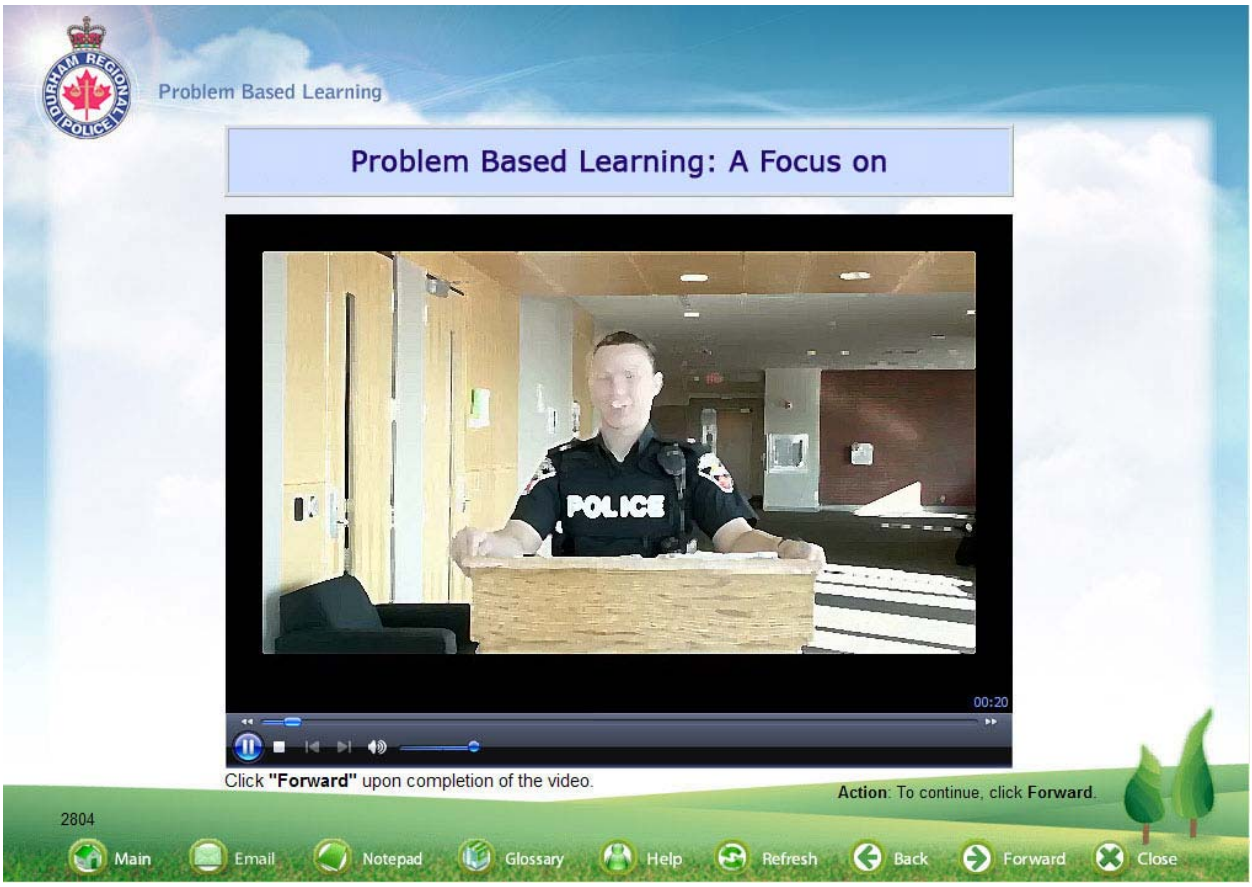

Figure 5. Screen capture of an example of a video presentation in the storytelling course.

Figure 5 is a screen-capture from video number 1 of the storytelling course and shows the officer delivering the narrative within the setting maintained throughout this video. Videos 2 and 3 follow the same pattern; the background is static the officers involved deliver the narrative in frontal view, generally from mid-torso and up (video number 2 has a full-frontal view of the officers).

Each video is preceded by an introductory screen that briefly describes (in text) the subject of the video that follows. Each video is followed by a screen that contains reflective questions based on the subject matter of the video.

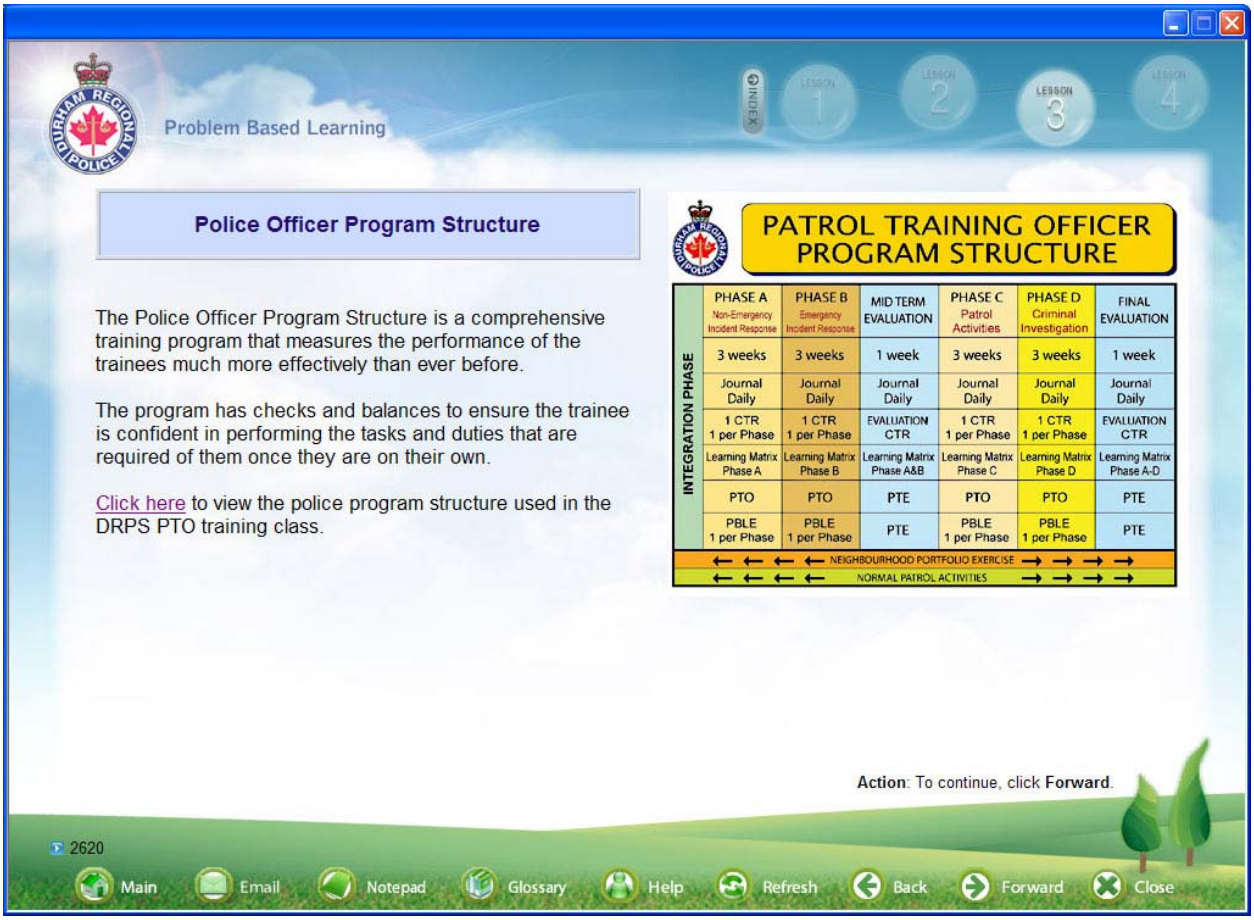

Figure 6. Screen capture image from a text page in a traditional text-based course.

Figure 6 demonstrates a page image from a traditional style of course presentation. In this style text and graphics are displayed on a page with links to other reading materials.

Desired Outcomes

It is important to revisit some key points here. There are two major differences between the traditional delivery method and the storytelling delivery method. One of the differences is in the type of content presented. In the traditional method, content consists of things such as descriptions, terminology and definitions, whereas the storytelling method consists of experienced officers relating their real-life work stories. The type of content being presented depends on the delivery method being used.

The other difference is in how the content is presented. In the traditional method, content is presented through a lecture-style format, with the descriptions, terminology, definitions delivered through text display, and audio and video readings of this text. The storytelling method course content delivery is through the video relating of experiences. The traditional method presents content in a conceptual framework; storytelling presents the content in an applied context.

There is support for the latter presentation as a more efficacious way of encouraging learning. Salinas (2006), Parrish (2007), and Paulus, Horvitz and Shi (2006) all attest to this. This research was designed to explore this further.

Another way of looking at the differences in the methods is through the different parts of Bloom's revised taxonomy (Krathwohl, 2002) that are being addressed in the learning guides of each method shown in Figures 2 and 3 below. The traditional method aims to address categories 1 through 4 (remembering, understanding, applying, and analysing) while storytelling aims to address categories 4 through 6 (analysing, evaluating and creating). The guides contain words reflecting these aims, in hopes of directing the

learner to apply these concepts to what they see and hear in the courses while also being indicative of the approaches taken.

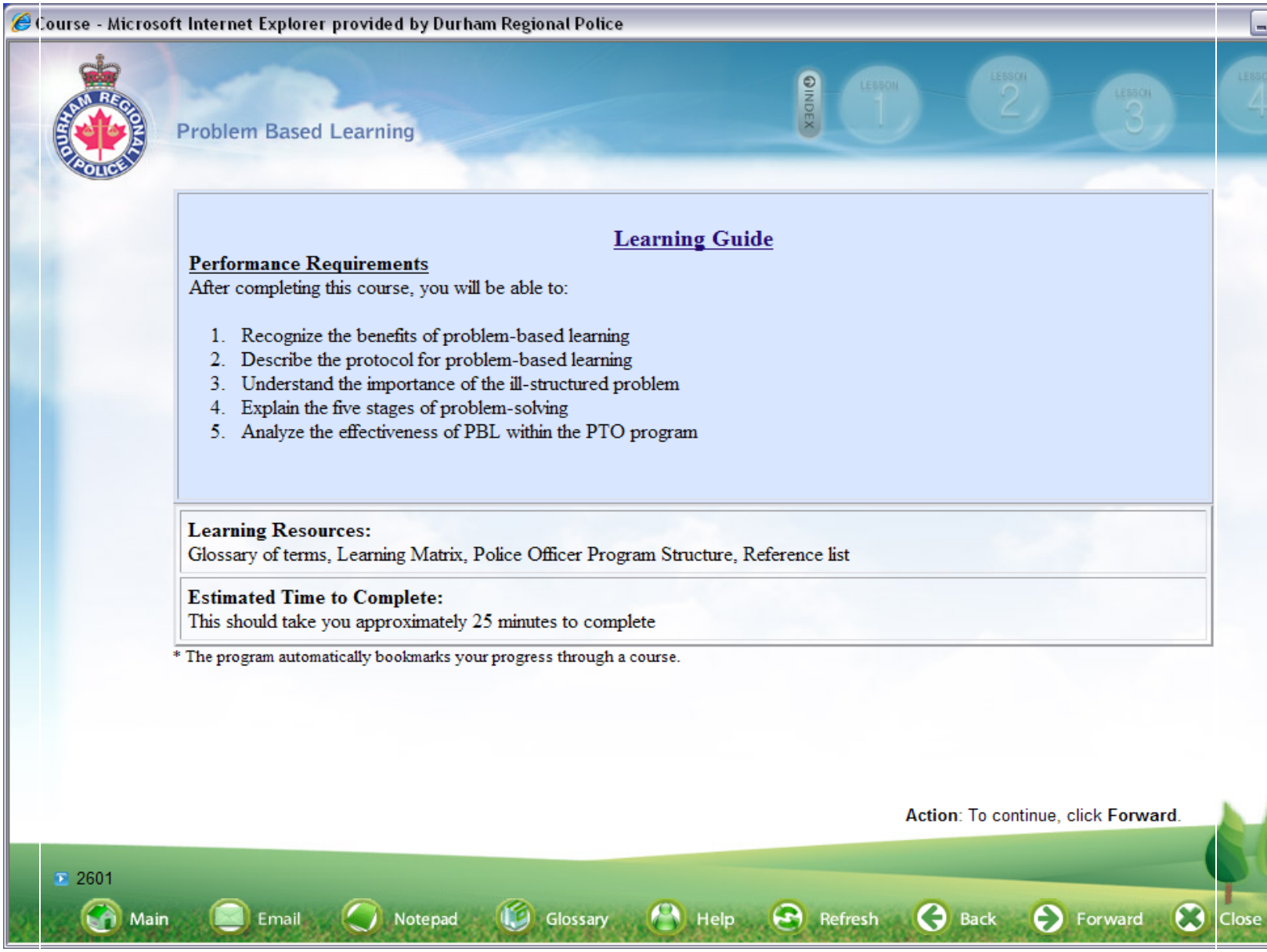

Figure 7. Screen capture of the learning guide from a traditional text-based course.

Figure 7 depicts the learning guide presented at the beginning of a traditional course in problem based learning offered through the DRPS TMLE. This guide addresses the learner and reviews what the expectations are for performance during this course. It uses primarily the language of categories 1 through 4 of Bloom's revised taxonomy (Krathwohl, 2002).

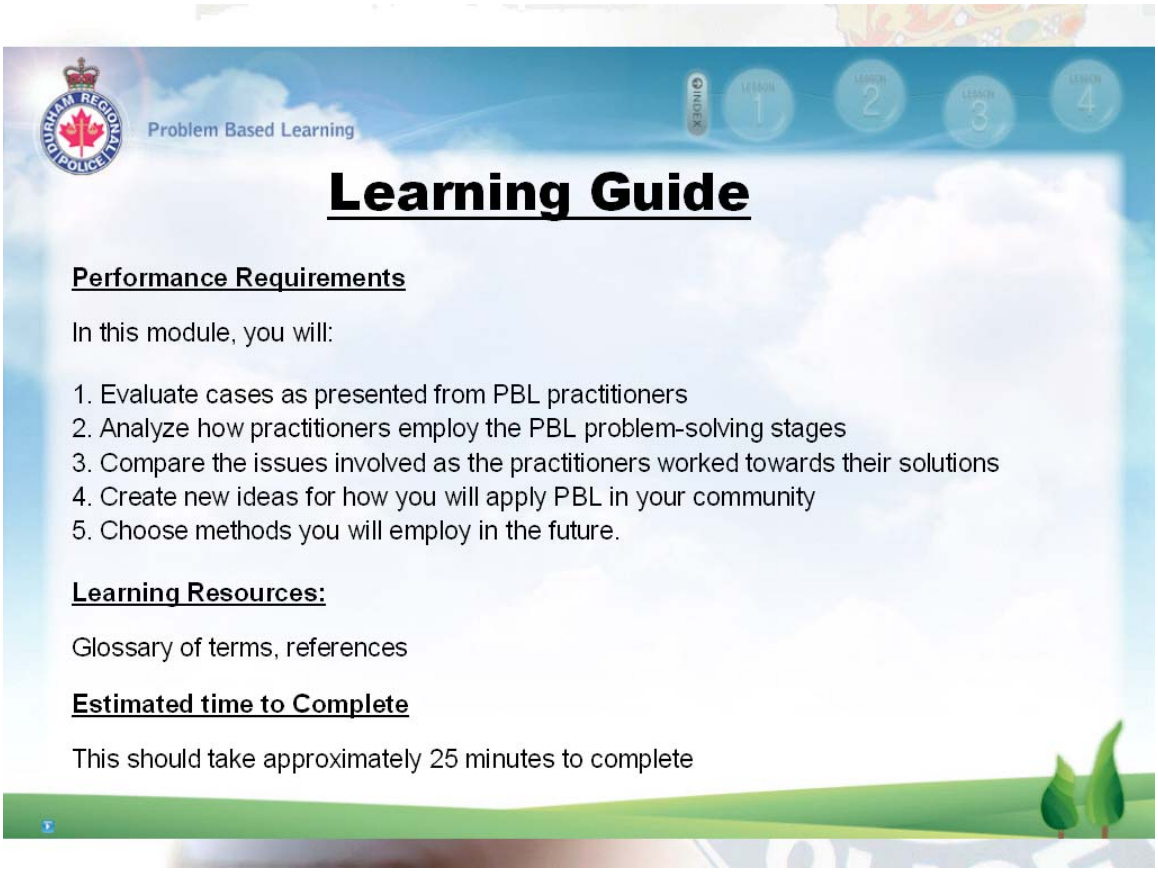

Figure 8. Screen capture of the learning guide from the storytelling course.

Figure 8 depicts the learning guide presented at the beginning of the storytelling method course. This guide addresses the learner and outlines the performance requirements for the course, using the language of categories 4 through 6 of Bloom's revised taxonomy (Krathwohl, 2002).

Appendix B – Letter of Invitation

[Date here] Dear Prospective Participant

I would like to invite you to be part of a research project entitled 'Experiential Narrative (Storytelling) in a Technology-Mediated Police Learning Environment'. This project is part of the requirement for a Master's Degree in Arts, at Royal Roads University. My name is Ken Anderson and my credentials with Royal Roads University can be established by calling Dr. William Muirhead, University of Ontario Institute of Technology, .

The objective of my research project is to explore the use of storytelling within the e-learning environment of the Durham Regional Police Service (DRPS). In addition to submitting my final report to Royal Roads University in partial fulfillment for a Master of Arts degree, I will also be sharing my research findings with the DRPS. Further publication related to the findings may be made be submitted for journal publication.

The research project will consist of a semi-structured interview with open-ended questions and is foreseen to last approximately one hour. The foreseen questions will include questions related to your views on how you learn from storytelling, how you use storytelling in your work, how you learn through e-learning, what use you think there is for stories in e-learning, your understanding of problem-based learning. Your name was chosen as a prospective participant because you have between one and three years police experience with the DRPS.

Information will be audio taped and, where appropriate, summarized, in anonymous format, in the body of the final report. At no time will any specific comments be attributed to any individual unless your specific agreement has been obtained beforehand. All documentation will be kept strictly confidential.

A copy of the thesis will be published. A copy will be housed at Royal Roads University. Please feel free to contact Dr. Muirhead at any time should you have additional questions regarding the project and its outcomes. Upon completion of the research, I will send you a summary of the results with the invitation to debrief it if you wish to.

I hold the position of Leader of the Police Learning Centre of the DRPS. I do not have any supervisory duties in relation to you. You are not compelled to participate in this research project. If you do choose to participate, you are free to withdraw at any time without prejudice and all data will be destroyed and will not form part of this or other research projects. Similarly, if you choose not to participate in this research project, this information will also be maintained in confidence.

If you would like to participate in my research project, please contact me at:

Name: Ken Anderson Email: Telephone: extension

Appendix C – Research Consent Form

My name is Ken Anderson, and this research project is part of the requirement for a Master of Arts degree program at Royal Roads University. My credentials with Royal Roads University can be established by calling Dr. Judith Blanchette, Associate Professor and Acting Director of the School of Information and Society at .

This document constitutes an agreement to participate in my research project, the objective of which is to explore the use of Experiential Narrative (Storytelling) in a Technology-Mediated Police Learning Environment, specifically, the e-learning environment of the Durham Regional Police Service (DRPS). The research will consist of a semi-structured interview with open-ended questions and is foreseen to last approximately one hour. The foreseen questions will refer to your views on how you learn from storytelling, how you use storytelling in your work, how you learn through e-learning, what use you think there is for stories in e-learning, your understanding of problem-based learning. In addition to submitting my final report to Royal Roads University in partial fulfillment for a Master of Arts degree, I will also be sharing my research findings with the DRPS. At this time I do not anticipate any further publication related to the findings although it is possible that a submission may be made later for journal publication.

Information will be recorded in hand written and audio taped format and, where appropriate, summarized, in anonymous format, in the body of the final report. At no time will any specific comments be attributed to any individual unless specific agreement has been obtained beforehand. All documentation and tapes will be kept strictly confidential, secured in a locked cabinet, and destroyed within one year of study completion. Your consent to participate includes your consent to destroy these items.

A copy of the final report will be published. A copy will be housed at Royal Roads University, available online through UMI/Proquest and the Theses Canada portal and will be publicly accessible. Access and distribution will be unrestricted. I hold the position of Leader of the Police Learning Centre of the DRPS. I do not have any supervisory duties in relation to you. As we are both employees of the same organization, if you have any concerns about this relationship please feel free to discuss them with me.

You are not compelled to participate in this research project. If you do choose to participate, you are free to withdraw at any time without prejudice. Any recordings and documentation of your participation will be destroyed at that time. Similarly, if you choose not to participate in this research project, this information will also be maintained in confidence. Continuing with this interview will serve to acknowledge that you give free and informed consent to participate in this project.

Date: _____Copy given to participant by:_____

Signature of Participant: _____

Appendix D - Interview Guide

1. Introductions
2. Review and Distribute Consent Form
3. Preliminary Questions
   a. -Could you please describe your experiences with the e-learning system of the Durham Regional Police Service
   b. -have you completed the Problem Based Learning courses

4. Thematic Questions (Questions to guide discussion. Allow for exploration of emergent issues)

   a) Do you like the storytelling method?

   b) What use do you make of story-telling during your recruit training period?

   c) How do you learn best during the use of e-learning courses?

   d) What suggestions do you have to enhance the delivery of e-learning?

   e) How did these courses help your understanding of Problem-based learning?

   f) Did you hear stories during your recruit training? What did you learn from them?

   g) Do you tell stories? What do you tell stories for?

   h) What use do you think there is for stories in e-learning? In training?

   i) Do you have anything else you wish to share that pertains to the research topic?