AN EXPLORATION OF THE CHARACTERISTICS OF CASE-BASED LEARNING ACTIVITIES IN DISASTER AND EMERGENCY MANAGEMENT POST-SECONDARY PROGRAMS: WHAT IS AND WHAT MIGHT BE

by

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Abstract

This study was motivated by my curiosity about what the distinctive characteristics of the use of cases in disaster and emergency management (DEM) post-secondary programs are and might be. DEM is a new field of post-secondary study, and as of yet there do not appear to be any signature case-based teaching methods, as there are in other fields of study (e.g., law, business). The goals of this study were to (a) explore how and why faculty members use case in teaching in the DEM field, (b) examine cultural historic factors influencing how and why cases are used, and (c) develop instructional design guidance, based on the study findings, to support the use of cases in the DEM field, considering both what is and what might be.

Qualitative case-based research methods were employed to learn about current practices for teaching with cases in the DEM field. Seven faculty members who have contributed to the development of DEM as a field of study participated in this research. The orienting theory for this study, which framed data collection and analysis, was activity theory, which is a recognized variant of socio-cultural learning theory. Data included transcripts from interviews with faculty members, as well as copies of course syllabi and materials used in their case-based learning activities. A total of 37 different case-based learning activity designs were examined in detail. The type of instructional guidance developed from the study findings was informed by practices associated with design-based research methods used in the education field.

The findings from the study supported the development of an outcome theory explaining three distinctive reasons for using cases in teaching in the DEM field, as well as how cases support achievement of each of the different types learning outcomes. The findings also informed the development an instructional design framework to support the use
of the outcome theory. The outcome theory and design framework demonstrate the value of scholarly inquiry into pedagogical practice in the DEM field, and are meant to spark discussion in the DEM higher education community about current and potential uses of cases in teaching.
Preface

This study was an independent research activity. I designed the study, conducted the research, analyzed the data, and wrote this manuscript. A professional editor was hired to proofread a final draft of this manuscript and she provided me with copy and stylistic editing recommendations.

Ethics approval for this study was received from The University of British Columbia Okanagan Behavioural Research Ethics Board. The number on the certificate was H12-00463. The approval was renewed on an annual basis, with the last renewal occurring on December 7, 2015. Ethics review was also received from Royal Roads University on April 17, 2012.
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Dedicated to my parents, Tillie Louise Slick and the late Robert Charles Slick, who were my first teachers in life.

With gratitude for your love, encouragement of my creativity, and constant support for the pursuit of my passions, whatever they might be.
Chapter 1: Study Introduction

The case method of learning was introduced as an innovative practice for teaching law at Harvard in 1870; over time, this method of instruction has been adapted for use in other professionally oriented academic programs of study (Garvin, 2003). A common motive for the use of cases in learning activities in these types of programs has been the need to develop the knowledge and competencies required for professional practice (Barrows & Tamblyn, 1980; Cruikshank, 1987; Garvin, 2003; Tosteson, 1979). Program specific (e.g., law, business) approaches to the use case-based learning activities reflect an interpretation of the nature of expertise in a given field of practice, and students’ learning needs relative to the development of this expertise (Garvin, 2003; Shulman, 2005).

The purpose of this study was to investigate the characteristics of case-based learning activities in disaster and emergency management (DEM) programs, which is a new field of postsecondary study. As of yet, there do not appear to be any distinctive approaches to the use of cases in the DEM field, as there are in other fields of study. Thus, in addition to examining what the characteristics of the use of cases in DEM programs currently are, another purpose of this study was to theorize about what the unique characteristics of the use of cases in teaching in this field might be. Studying ‘what is’ and ‘what might be’ are two recognized lines of inquiry in the scholarship of teaching and learning (SOTL; Hutchings, 2000).

This introductory chapter presents the rationale and design for this research study. To help situate this study, the constructs and literature related to disasters, disaster and emergency management as a field of study and practice, and the scholarship of learning and
teaching are reviewed. The chapter concludes with a description of the organization of this manuscript.

**Study Rationale**

DEM has emerged as a new field of academic study in post-secondary institutions in Canada and the United States over the last few decades. An impetus for the development of the field of study came from concerns that decades of social science research related to human experience with hazards and disasters were not being applied in practice (FEMA, 2014; National Research Council, 2006). Thus, while DEM has developed as an academic field of study, it has a practical aim and pedagogies need to be able to support the application of knowledge in future professional practice.

As a new field of study, there is as of yet, limited scholarship of teaching and learning in the DEM field, and the literature that does exist is primarily descriptive accounts of personal pedagogical practices (e.g., Rozdilsky, 2008; Schwartz, 2009), rather than research studies about teaching. Shulman, in an interview with Brant (2002), suggested research on teaching needs to “focus on the intersection of content and pedagogy” (p. 18) in a way that “brings together the wisdom of practice on a topic-by-topic, idea-by-idea basis” (p. 18). This research study focused on examining the intersection of content and pedagogy as it relates to the use of cases in learning activities in DEM post-secondary programs.

My interest in the use of cases in learning activities builds from over 25 years of professional experience in the DEM field, as well as my experience in using cases in my teaching in the Royal Roads Master of Arts in Disaster and Emergency Management program since 2008. My use of cases in learning activities has been influenced by my reflections about how my DEM experiences informed the development of my professional
expertise. My professional expertise is craft, and thus case based. While the initial cases and designs for case-based learning activities in my own teaching drew extensively from my professional experience, during my doctoral studies I began to explore how learning theory and the literature on case-based learning could inform how I used cases in my teaching. I also started to incorporate the DEM research literature as a source for case material; however, there was a limited body of literature about this approach to the use of cases in learning activities (e.g., Bordt, 2005; Epstein, 1972, White, 2001). During this same period of time I was selected as scholar for a scholarship of teaching and learning (SOTL) initiative at Royal Roads University. Through my participation in SOTL workshops I started to think about how I could systematically examine how the case-based learning designs I had developed were supporting students’ learning. While my initial plan for my doctoral research was to study the use of cases in my own teaching, I came to realize that I could potentially make a more substantive contribution to the field by researching how and why other faculty members use cases in their teaching in the DEM field and considering what the rationale for a distinctive approach to the use of cases in the DEM field might be. Knowledge about the use of cases in the DEM field appeared to be a gap in the literature. Thus, the lack of scholarship related to the use of cases in teaching in the DEM field and my experiences in using cases in my own teaching were motives for this study. The intended contributions of this study were to (a) bring the language and lens of SOTL into DEM during its formative stage of development as field of study, (b) generate new knowledge about how and why cases are used in teaching in DEM post-secondary programs, and (c) support what “might be,” by developing a theoretically informed, and evidence and practice-based guidance for the use of case-based learning in DEM post-secondary programs.
Study Design

As this research study was about the design of learning activities, the study was influenced by my own beliefs about learning, which are situated in relation to existing theories. I understand learning to be both a cognitive and sociocultural process (Cobb, 2005; Cole & Engeström, 1993; Fosnot & Perry, 2005; Greeno, 2006; Kaptelinin & Nardi, 2009). This view supports that a learner constructs knowledge, and that this construction is facilitated by participation in the social world. The social dimension of learning occurs on two levels, through social interaction with others, and through the use of tools and symbols, which are culturally derived. Activity theory is viewed as an appropriate organizing framework for integrating cognitive and social constructivist dimensions of learning (Jonassen & Rohrer-Murphy, 1999; Kaptelinin & Nardi, 2009).

An affordance of the use of activity theory as a heuristic tool is that it provides a means of understanding the constituent elements of a particular system (e.g., case-based learning designs) in a way that captures cultural-historic influences (e.g., faculty member, disciplines, profession, local context) on an activity system (Engeström, 1999). Knowledge of the cultural-historic influences on the design of learning activities is an important input into thinking about what the use of cases in DEM learning activities might be. When using activity theory in research, Engeström, Miettinen, and Punamäki (1999) recommended the analysis of an activity system take into account a systems’ view as well as the subject’s view of the system. Accordingly, this qualitative research study sought to understand how and why faculty members teaching in DEM programs use case-based learning activities in their teaching from both emic (i.e., a faculty member’s) and etic (i.e., an activity system’s)
perspectives. This study also had an applied aim, which was to develop instructional
guidance for the use of cases in the DEM field based on the study findings.

The primary research questions that guided this study reflected my personal motives,
as well as the theoretical framework for the study. The study questions were as follows:

1. How and why do faculty members use case-based learning in their teaching in
disaster and emergency management postsecondary programs?

2. What cultural-historic influences are reflected in the characteristics of faculty
members’ case-based learning activity designs?

3. What instructional design guidance can be derived from this study’s findings to
inform a theoretically grounded approach to the use of cases in learning activities
in disaster and emergency management postsecondary programs?

The design for this study integrated case-based research methods with elements from
design-based research. Case-based research is recognized as being an appropriate
methodology when asking how and why questions (Yin, 2014); it is also recognized as a
methodology that aligns with the use of activity theory (Yamagata-Lynch, 2010). Given
faculty members’ agency in designing courses and learning activities, each faculty member
participating in the study was considered a research case, and examples of their different
approaches to the use of cases in their teaching were subunits of analysis. Faculty members
participating in the study were recognized scholars in the DEM field, who have all
contributed to the development of DEM as a field of study. Given that this case-based
research study was about case-based learning activity designs, it is considered to be a form of
design-based research study. Design-based research methods requires theory about the design
of an intervention be identified in an advance of a study and explicates the methods of
making generalizations from the findings of exploratory studies about the design of learning activities (Gravemeijer & Cobb, 2006; Nieveen, McKenney, & van den Akker, 2006). A product of design-based research studies is some form of instructional guidance, which is both theoretically grounded and empirically based. A goal of this study was to develop this type of guidance for the use of cases in DEM postsecondary programs. The next section further situates this study in relation to core constructs and the literature.

**Situating the Study**

The way people conceptualize disasters influences the practice of DEM and the study about this practice. To help situate this research study, the definition of disaster will be discussed and the history of development of DEM as a field of professional practice and postsecondary study will be described. Finally, the research questions framing this study will be situated in relation to traditions within the SOTL.

**Disasters.** While the definition of a disaster has long been debated and discussed (National Research Council, 2006; Perry & Quarantelli, 2005), any definition of a disaster is a social construction. There have been historical and conceptual shifts in people’s understanding of disasters as phenomena; the perspectives range from viewing disasters as acts of God, to acts of nature, to acts of men and women (Quarantelli, 2000). The fundamental difference between these worldviews of disasters is the degree of agency of people in their relationship with hazards in the human, natural, and built environments. While disasters are still referred to by some as being acts of God, the literature in the DEM field recognizes that disasters are a product of the interrelationship of hazards with social, political, and economic systems. Hazard impact cannot be separated from place, and hence hazard risk is situated. Preexisting vulnerabilities and capacities influence human experience
with hazards, and thus social and geographic variables influence risk in relation to particular hazards. Further, the hazard context is not static. Disasters are projected to increase in frequency and intensity, due to a changing climate, and other factors such as urbanization. In addition, events such as September 11, 2001 in the United States (US) and 2014 West African Ebola outbreak reaffirmed the diversity of hazard types and associated impacts on society. Accordingly, a postsecondary DEM program of study requires that students explore and understand (a) how personal, professional, and societal views of hazards and disasters influence the practice of DEM; (b) DEM problems as situated and complex phenomena; and (c) future experience with disasters may be outside the scope of past experience.

The human experience with hazards and their impacts has been studied from multiple and interdisciplinary perspectives, and the resulting knowledge base from hazards and DEM research has advanced considerably over the last 50 years (Mileti, 1999; National Research Council, 2006). Hazards research has primarily focused on studies of the topic of hazard vulnerability and hazard mitigation; disaster research has focused on the topics of emergency response and disaster recovery; and the topic of disaster preparedness has been a shared topic (National Research Council, 2006). Experts now debate whether or not disaster management is a discipline of its own (Jensen, 2011; Phillips, 2005). Nonetheless, experts believe knowledge derived from the extensive body of hazards and disaster research “has the potential to significantly reduce the societal impacts of disasters” (National Research Council, 2006, p. 314). However, researchers have argued, “Significantly more is known about solving hazard and disaster problems than is being applied” (National Research Council, 2006, p. 36). The gap between what is known about disasters and their impacts, and
how society deals with disasters has been an influence on professionalization in the DEM field and the development of DEM as a field of study.

**Disaster management as a field of professional practice.** While humankind has always responded to disasters, there has been increasing emphasis over the last few decades on developing DEM as a professional field of practice (Britton, 2001; FEMA, 2014; Mileti, 1999). Several paradigm shifts have influenced thinking about this field of practice. The United Nations declared the 1990s as the International Decade of Disaster Risk Reduction, drawing attention to the importance of reducing disaster risk in advance of disasters (O’Brien, O’Keefe, Rose, & Wisner, 2006). This was a shift from response and top-down management paradigm that had prevailed in the preceding decades, which drew from a civil defense approach to the management of disasters (Britton, 2001; O’Brien et al., 2006; van Aalst, Cannon, & Burton, 2008). Efforts to reduce disaster risk not only require analysis of the hazard, but also the causal factors that influence negative impacts and positive outcomes (Wisner, Blaikie, Cannon, & Burton, 2004). This broadened analysis of disaster contexts necessarily links disaster management to development practices, and changes the scope and nature of disaster management activity (Mileti, 1999). Despite the shifting paradigms of disaster management as a field of practice, much of current professional practice is response oriented, and management activities are still strongly influenced by command-and-control approaches.

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1 I use the term disaster and emergency management and the abbreviation DEM to refer to the profession and field of study. However, this field is often referred to as emergency management in much of the literature, particularly in the United States. For elaboration on the differences in terminology see Neal (2000).
Since the early 2000s, experts have placed an emphasis on the need to integrate approaches for climate adaptation and disaster risk reduction; this is because 90% of disasters are weather related (O’Brien et al., 2006; Schipper & Pelling, 2006; Thomalla, Downing, Spanger-Siegfried, Han, & Rockström, 2006). Disaster managers will increasingly need to prepare to respond to events that are outside the norm of past experience and must find ways to mitigate and reduce future risks. This requires anticipatory learning, which is the ability to anticipate a “desired event, situation, or goal, and … attempt to attain it by generating its cause” (von Glasersfeld, 1998, p. 14). Effective learning from past experience is understood to support the development of this human capacity to proactively adapt (Fazey, Fazey, & Fazey, 2005; Hollings, 2001; McBean & Ajibade, 2009; Smithers & Smit, 2009; Tschakert & Dietrich, 2010). Thus, in DEM programs of study students need to learn from past disaster experience in a way that supports application of this knowledge to reduce future disaster risks, whatever they might be.

Disaster management as a field of study. DEM emerged as a new field of academic study in postsecondary institutions in Canada and the United States over the last few decades. Several factors influenced the development of this new field of study. The number of disasters has increased over time, as has the scale of some events (FEMA, 2014; Centre for Research on the Epidemiology of Disasters). The complexity of the current operating context is such that professional expertise is needed to effectively engage in reducing disaster risk, as well as responding to disasters (FEMA, 2014). Historically, emergency management has been a second or third career for first responders or those in the military (FEMA, 2014). While they bring transferable skills, their knowledge has been gained through experience, rather than through academic study in the DEM field (FEMA, 2014). A consequence of
emergency managers’ lack post-secondary education is decades of social science research related to human experience with hazards and disasters is not being applied in practice (FEMA, 2014; National Research Council, 2006). As previously noted, the knowledge gained through research, if applied, has important societal consequences (Fothergill, 2000; National Research Council, 2006; Quarantelli, 1993). These conditions were the impetus behind a FEMA initiative in the mid-1990’s that promoted the development of DEM as a field of study at post-secondary institutions in the United States. In the early 1990’s there were only a handful of postsecondary programs in the DEM field, and in 2014 it was estimated there were over 250 programs being offered at colleges and universities in the United States (FEMA, 2014). These programs are seen as an important means of supporting knowledge transfer from disaster research to professional practice (Mileti, 1999; Neal, 1993, 2000; Oyola-Yemaiel & Wilson, 2005; Phillips, 2007).

Although there was no parallel higher education initiative by the federal government in Canada, the same general conditions led to the development of DEM post-secondary programming in Canada, albeit on a smaller scale. The first Canadian undergraduate program in DEM was established at Brandon University in 2001 (May, n.d.). In 2006, Royal Roads University established the first graduate DEM program in Canada, and York University followed soon after with an undergraduate and graduate program. There are a limited number of other diploma and certificate programs offered at colleges and technical institutes at various locations across Canada. Within discipline-specific postsecondary programs (e.g., geography) individual courses related to disasters and hazards are offered.

While there has been considerable growth in the development of DEM postsecondary programs over the last few decades, DEM as a field of study is clearly still at formative stage.
of development in Canada and the United States. Discussions in the DEM higher education community have focused on (a) whether or not disaster management is a discipline or an interdisciplinary field of study (Jensen, 2011; Phillips, 2005); (b) the required competencies of a disaster and emergency manager in the 21st century (Blanchard, 2005); (c) what the content and curriculum should include (Alexander, 2003; Drabek, 2009; Lindsay & Britton, 2010; Neal, 2000; O’Connor, 2005; Phillips, 2005); and (d) research standards (Jensen, 2014). There is as of yet minimal scholarship on teaching and learning in this new field of study, and recognition that this type of scholarship is needed (Phillips, 2005). Thus, one of the contributions of this study is the introduction and advancement of this form of scholarship during the formative stage of development of DEM as a field of study.

**Scholarship of teaching and learning.** Boyer (1990), in his seminal text, *Scholarship Reconsidered: Priorities of the Professoriate*, situated the scholarship of teaching as one of four types of scholarly inquiry. In doing so, Boyer elevated the importance of knowledge about teaching as a distinct form of scholarship. As McKinney (2007) noted, scholarship of teaching has been a recognized form of scholarship within different disciplines (e.g., sociology) for many decades and predates Boyer’s use of this term. More recently, the term scholarship of teaching has changed to include the word learning, and disciplinary styles in this form of scholarship have been recognized (Huber & Morreale, 2006). While SOTL inquiry is commonly focused on studying learning and teaching in relation to one’s own pedagogical practice (McKinney, 2007), in this study I examined the practices of others, rather than my own practice. In this regard, this research utilized a broader definition of SOTL, which is inclusive of any scholarly inquiry that seeks to contribute to new knowledge about teaching and learning as it is situated in practice.
Hutchings (2000) suggested that SOTL inquiry is commonly focused on asking “what works” (p. 4), “what is” (p. 4), what might be, as well as developing “new conceptual framework(s) for shaping thought about practice” (p. 5). The original focus of this research study was on examining ‘what is’ as well as ‘what might be.’ An unexpected outcome of this study was the development of a new conceptual framework for shaping thought about the use of cases in learning activities in DEM post-secondary programs.

**Organization of the Study**

This first chapter has served to introduce and explain the purpose of the study and to situate the study in relation to the development of DEM as a field of study and professional practice, as well as to the SOTL. The second chapter presents the conceptual framework for the study, grounds this framework in relation to the literature, and discusses the methodological implications for the study design. The third chapter describes the research design in more detail, including the methods for and conduct of the study. The fourth chapter is comprised of seven individual case reports, each addressing how and why faculty members used cases in their teaching, and the cultural-historic factors that appeared to influence their approach to the use of cases. The fifth chapter presents the cross-case analysis of how and why faculty members used cases in their teaching, while the sixth chapter presents the cross-case analysis of the cultural-historic influences on the characteristics of case-based learning activities. The seventh and final chapter presents the instructional design guidance developed from the findings from this study. The seventh chapter ends by summarizing the contributions and limitations of the study.
Chapter 2: Conceptual Framework and Literature Review

This purpose of this chapter is to present the conceptual framework for this study, and in doing so to situate the framework in relation to established learning theory and other relevant bodies of literature. The conceptual framework for this study was grounded by a constructivist epistemology. Activity theory, as a cultural-historic variant of constructivist learning theories, served as the “orienting framework” (diSessa & Cobb, 2004, p. 81) for examining how and why faculty members use cases in their teaching. Figure 1 illustrates the progressive refinement of the application of activity theory in this study; each refinement, or lens, draws from and integrates additional perspectives and literature bases. The second lens for this study focused on instructional design as a design-based activity, learning activities as a specific type of design, and case-based learning as a specific type of learning activity. The third lens focused on the cultural-historic factors that are understood to influence the characteristics of learning activity designs. These factors included, but were not limited to, the influence of disciplines and professions associated with a field of study. The fourth lens focused specifically on the cultural characteristics of case-based learning activities. These different lenses provided the conceptual framework for the study of faculty members’ practice of using cases in DEM postsecondary programs and for theorizing about how cases might be used in this newly developing field of study. The structure for this chapter follows the flow of elements in the conceptual framework, as illustrated in Figure 1.

Figure 1. Conceptual framework for this study.
Activity Theory

Activity theory is based on a constructivist view of learning, which supports that meaning is constructed out of experiences in the world. The development of constructivist learning theories is attributed to the work of Piaget (1969) and Vygotsky (1978), who, while living in different cultural contexts, each posited that learning occurs through interaction between a subject and their world. Understanding the difference between their perspectives helps to situate activity theory as a specific variant of constructivist learning theory. Piaget, drawing from his early work as a biologist, studied the mechanism of learning, specifically how individuals come to know. He stated, “To know is to construct or reconstruct the object of knowledge in such a way as to capture the mechanism of construction” (Piaget, 1969, p. 356); the structure of knowledge is then both figurative (representational) and operative (transformational). Piaget viewed human cognition as a process of equilibration with the environment, which occurs through interaction of the subject with the world. Theories of the construction of knowledge at a cognitive level, with emphasis on internal and biological aspects of cognition are referred to as cognitive constructivist perspectives.

Vygotsky (1978), who also built from a biological and zoological understanding of learning, sought to “describe and specify the development of those forms of practical intelligence that are specifically human” (p. 23). Vygotsky argued that the human process of cognition could not be separated from the social environment of the individual. Theories of the construction of knowledge as a sociocultural process are referred to as social constructivist perspectives (Cobb, 2005). Activity theory is one social constructivist theory of learning, situated learning theory (i.e., Lave & Wenger, 1991) is another. Constructivist theories on learning continue to evolve, as have the debates about the congruity or tension
between cognitive and sociocultural constructivist perspectives (Cobb, 2005). Cobb (2005) suggests that Vygotsky’s (1978) sociocultural strand of constructivism is an early variant or the first generation of activity theory. Activity theory, as it has developed, is understood to incorporate the cognitive and sociocultural dimensions of constructivism (Cobb, 2005; Greeno, 2006). The theory, which is also referred to as cultural-historic activity theory using the acronym CHAT, has had a significant influence on approaches to the design of instruction and the study of learning in context. This section provides an overview of the development of activity theory, explains the key tenets of the theory, and discusses some of the methodological implications of the theory for the design of this study.

**Vygostky’s contributions to activity theory.** Vygotsky (1978), a Russian psychologist, studied the different ways in which human engagement in the social world through practical activities contributes to psychological development. He explained that human activity, at its most basic level, is a subject acting on an object through the use of signs and tools, which are culturally derived. While signs and tools mediate activity, they each have a different function:

The tool’s function is to serve as the conductor of human influence on the object of activity; it is externally oriented; it must lead to changes in objects … the sign, on the other hand, changes nothing in the object of psychological operation. It is a means of internal activity aimed at mastering oneself; the sign is internally oriented. (Vygotsky, 1978, p. 55)

The integrated use of signs and tools as mediating artifacts in the conduct of activity is understood to be a uniquely human “higher psychological function” (Vygotsky, 1978, p. 55).
It is the use of signs (which are psychological tools) in particular that enable external activity to become internalized.

Vygotsky (1978) explained the process of internalization of activity is also supported by social interaction, and this interpersonal and interpsychological activity is a foundational step in intrapsychological development. Vygotsky further elaborated on the role of others in an individual’s psychological development, and in doing so articulated the different between learning and development. He noted there is a gap between what an individual can independently do when faced with a problem to solve, and what an individual can accomplish when aided by a more knowledgeable person (Vygotsky, 1978). Vygotsky referred to this gap as the “zone of proximal development” (p. 86) and stated that a characteristic of learning environments is the intentional creation of zones of proximal development. From this perspective, he argued, “Learning is not development” (Vygotsky, 1978, p. 90); rather, learning is a socially enabled and necessary process that supports psychological development over time. While Vygotsky broke away from cognitive constructivist traditions based on a biological understanding of learning and development, his work remained focused on the way in which the social world influenced individual psychological development.

Leont’ev’s contributions to activity theory. Leont’ev expanded on the work of Vygotsky and other Russian scholars. Leont’ev’s contributions to the development of activity theory included providing a deeper understanding of the object of human activities, as well as the structure of collective activities. While the needs of a subject direct activity, Leont’ev (1974) asserted it is the object that fulfills these needs; thus, the object is the “true motive” (p. 62) of activity. Given that objects meet different needs, activities can be distinguished and
differentiated by their objects (Leont’ev, 1974). Leont’ev further explained, while needs and motives were realized in the object of activity, the structure of activity itself was made up of individual goal-directed actions and operations based on conscious or unconscious conditions. The division of labour in relation to the object of an activity allows individuals to work collectively towards fulfillment of their needs (Leont’ev, 1974). Hence, the structure of a collective activity is comprised of different individuals carrying out different actions towards different goals, even though the activity is directed towards and motivated by a shared object (Leont’ev, 1974). This hierarchical model of activity is understood to support a finer grained analysis of the structure of activity (Leont’ev, 1974).

The development of activity theory continued as other researchers outside of the Russian context appropriated the theory for their own use (e.g., Engeström, 1999; Kaptelinin & Nardi, 2009). The differing foci of the application of activity theory have shaped its subsequent development. Two recognized strands of the development of activity theory were of relevance to the design of this research and informed the propositions for this study. The first strand is Engeström’s (1999) work, which has focused on learning, development, and change in work contexts (developmental work research), and the second strand is Kaptelinin and Nardi’s (2009) work, which has focused on digital artifact interaction design. These more recent contributions to the development of activity theory show how the theory has continued to evolve as a result of different needs and motives.

**Engeström’s contributions to activity theory.** Engeström’s (1999) contributions include expanding the triangular model of activity theory, which had previously been limited to subject, object, mediating artifacts (signs and tools), and a focus on psychological development, to include the elements of community, rules, division of labour, and outcomes.
These additional elements reflect and take into account the collective dimensions and nature of activity (Engeström, 1999). The inclusion of the element of community situates the subject in relationship to a specific community, or communities, while rules, which have their own histories, mediate the relationship between the subject and community (Engeström, 1999). The division of labour mediates the relationship between the community and the object, and is the basis for understanding the structure of individual goal-directed actions (Engeström, 1999). The inclusion of outcome reflects Engeström’s attention to the collective dimensions of activity, in which the needs satisfied by the object relate to prospective development or change at the external level, rather than to individual psychological development.

Engeström’s way of illustrating this expanded triangular model of activity is depicted in Figure 2.

![Figure 2. Engeström's expanded triangular model of activity.](image)

In addition to expanding on the triangular structure of activity, Engeström (2001) suggested a third generation of activity theory is needed to address the interrelationships between different activity systems (p. 135). An understanding of collective activity, Engeström (2001) suggested, requires analysis of a minimum of two interrelated activity systems (p. 136). In the third generation model, as illustrated in Figure 3, the interaction between activity systems is focused on the elements of the object that are shared by and connect both systems. In this research study, I considered the process of designing a learning activity to be one activity system, with the object of the instructional design activity being a learning activity design. The learning activity design is itself a separate activity system, of which the object is some form of learning outcome. The shared object of the design activity and learning activity design is the intended learning outcomes.

Figure 3. Engeström’s model of the third generation of activity theory.


Engeström (2010) also developed a “theory of expansive learning” (Engeström, 2010, p. 74), in which he conceptualized learning as a collective activity that enables the creation of new forms of practice. Engeström (2010) suggested the need for development of this theory arises from the context in which work is situated today, as the lifespans of products and
processes have been shortened. He further noted that the “societal need for expansive learning” (Engeström, 2010, p. 75) has been influenced by the advancement of digital forms of mediation (e.g., the Internet and Web 2.0) and the emergence of global threats and risks (e.g., climate change and pandemics).

Kaptelinin and Nardi’s contributions to activity theory. Another strand of development of activity theory has been focused on its application in human–computer interaction, specifically on interaction design (Kaptelinin & Nardi, 2009). The appropriation of activity theory as theoretical framework for understanding human computer interaction served to situate and understand digital artifacts in relation to human activity systems (Kaptelinin & Nardi, 2009). Activity theory has been used as a tool to support the formulation and instantiation of human–computer interaction designs (Kaptelinin & Nardi, 2009). Interaction design, Kaptelinin and Nardi (2009) stated, “Comprises all efforts to understand human engagement with digital technology and all efforts to use that knowledge to design more useful and pleasing artifacts” (p. 5). Kaptelinin and Nardi advanced theoretical understanding of (a) the outcomes of collective activities; (b) the relationship between needs, motives, and the object of an activity; and (c) the characteristics of agents and agency from an activity theory perspective.

While acknowledging that activity is object oriented, Kaptelinin and Nardi (2009) qualified the inherent relationship between a subject and an object determines an activity, and this relationship informs the development of both the subject and object that occurs through the conduct of activity. Hence, from a methodological perspective, analysis of activity seeks to understand the developmental changes in both the subject and the object, and their interrelationship. This perspective contrasts with Engeström’s (1999) illustration in Figure 2
of the outcome stemming from the object of activity. While the object influences the outcome of an activity, change in the object is not the only outcome. The process of internalization of external activity through sign use was established in Vygotsky’s (1978) work. In this regard, the outcomes of learning activities also include interpsychological developmental of the subject. In this regard, the placement of the outcome of an activity in Engestrom’s model of human activity (Figure 2) might be better illustrated as being between the object and the subject.

Another contribution of Kaptelinin and Nardi’s (2009) in the development of activity theory has been their work on analyzing the relationship between the needs, motives, and object of activity. Kaptelinin and Nardi addressed perceived contradictions in Leont’ev’s (1974) understanding of polymotivated activities and argued for the separation of analysis of needs and motives in relationship to an object. Further, Kaptelinin and Nardi proposed there is a one-to-one relationship between needs and motives and that multiple motives conjoin in a given social context, as well as in relation to the conditions and means within that context in the formulation of the object of an activity; regardless of the number of needs and corresponding motives, Kaptelinin and Nardi (2009) stated there is only one object in a given activity. This holds true in collaborative activity, in which various subjects may have different motives relative to the object of the activity; these diverse motives may be a source for tensions or contradictions during the instantiation of an activity (Kaptelinin & Nardi, 2009). Kaptelinin and Nardi suggested a goal in the analysis of activity is to understand the relationship between all of the different motives; this presumably extends to an analysis of needs. In turn, the ability to link goal-directed actions back to the needs that gave rise to the activity provides a deeper understanding of why the activity is taking place (Kaptelinin &
Nardi, 2009, p. 155). Within this study, I hypothesized that learning and instructional needs conjoin in both the formulation and instantiation of the design of a learning activity, and that multiple needs and motives could be reflected in the object of a learning activity.

A further contribution of Kaptelinin and Nardi (2009) is a typology that explains the relationship between different types of agents and forms of agency; a motive for development of this typology was the need to be able to distinguish between the agency of digital artifacts and humans. Kaptelinin and Nardi defined human agency “as the ability and the need to act” (p. 242) and further bound the definition of acting to mean, “producing an effect according to an intention,” with the intentions reflecting needs (Kaptelinin & Nardi, 2006, p. 242). Using these definitions, and building from the principles of activity theory they propose that the types of agency include (a) conditional agency, which is to produce effects; (b) needs-based agency, which includes acting according to biological or cultural needs, and (c) delegated agency, which is realizing the intention of (other) human beings (Kaptelinin & Nardi, 2006, p. 244). Of relevance to this study is that both human beings and social entities (e.g., universities) are understood to have conditional agency, needs-based agency, and delegated agency.

**Methodological implications arising from the use of activity theory.** Learning theories are descriptive, rather than prescriptive. Principles, which reflect one or more propositions inherent in activity theory, have been developed to support the application of learning theory in practice. Both Engeström (2001), and Kaptelinin and Nardi (2006) have developed a set of activity theory principles; variations between these sets of principles reflect differences in their foci in the use of activity theory in their work. Both sets of principles build on and extend the core tenets of activity theory as established by Vygotsky
Engeström’s (2001) first principle is that a “collective, artifact-mediated, object-oriented activity system” (p. 136) should be the primary unit of analysis. Further, Engeström stated that individual actions could only be understood when they are situated in relation to the collective activity of which they are a part. For example, in this study, while an individual instructor may have designed a case-based learning activity, the object of that learning activity would necessarily be a reflection of the instructor’s perception of the collective motives of a program of study, which is the larger activity system of which an individual course or learning activity is a part. Given the professionally oriented nature of DEM as a postsecondary field of study, the collective motives of a program of study reflect an institution’s interpretation of the interrelationship between academic learning needs and the needs of DEM as a profession. Hence, while the subunit of analysis of this study included faculty members’ case-based learning activity designs, their learning designs were situated in and need to be understood in relation to the program of studies at the university in which they work.

Engeström’s (2001) second principle is multivoicedness, which recognizes that the nature of collective activity is such that there are always multiple perspectives reflected in the different elements within an activity system. For example, while all faculty members in a program of study have their own disciplinary backgrounds, the tools they select for use in a case-based learning activity will necessarily reflect the different disciplinary orientations of the authors of the articles or books selected for use in a given activity. These disciplinary perspectives may be the same as, or different from, those of the faculty member who is a
subject in an activity system. Similarly, students bring their own beliefs and experiences into a learning activity. Hence any learning activity, even when considered as a closely bounded system, still integrates multiple points of view.

Engeström’s (2001) third principle is historicity. Engeström (2001) explained the methodological implications of the principle of historicity and provided an example of its application in studying work practice:

History itself needs to be studied as the local history of the activity and its objects, and as the history of theoretical ideas and tools that have shaped an activity. Thus medical work needs to be analyzed against the history of its local organization and against the more global history of the medical concepts, procedures and tools employed and accumulated in the local activity. (p. 137)

While a case-based learning activity design can be analyzed according the relationship between the constituent elements in the activity system, the characteristics of the learning activity need to be further analyzed in relation to the histories of the constructs, tools, and practices that are reflected in a particular faculty member’s approach to the use of case-based learning in his or her teaching. These histories include the individual biographies of the faculty members, who are subjects in an activity system, as well the histories associated with the other elements of a learning activity design. A goal of this research study was to understand the particular histories that shape the disciplinary characteristics of case-based learning activity designs in DEM higher education programs of study.

Engeström’s (2001) referenced his fourth principle, contradictions, as originating with the work of Il’enkov. This principle is based on the notion that activity systems give rise to contradictions or tensions between elements in a system (Engeström, 2001). These
contradictions, or tensions, Engeström explains, are a source for change and development of an activity system or practice. For example, the limitation of existing tools in mediating students’ learning activity may give rise to the appropriation or creation of new tools for use in an activity. The development of new tools may be a need of an instructor or a need of students. The tension, or contradiction, in this instance is between the tools and the object. If the tension is not addressed and the tools are not appropriate for the object, then the activity may be disrupted, or the needs associated with the object may not be met (Engeström, 2001).

Engeström’s (2001) fifth principle is the expansive cycle of activity, which recognizes that collective activity time is cyclic and repetitive; this contrasts with action time, which is finite. Contradictions within a collective activity system, or networks of activity systems, give rise to the development of new forms of activity and practice (Engeström, 2001). For example, if new tools are appropriated or created to mediate collective activity (e.g., an electronic discussion forum vs. a virtual collaborate session), the nature of the activity itself may change. Engeström suggested that an expansive cycle of activity is a collective perspective on Vygotsky’s (1978) “zone of proximal development” (p. 86). The recent and continuing development of DEM as a field of study is an example of the construct of an expansive cycle of development. Engeström’s (2001) principle of the expansive cycle of activity was further developed into his theory of expansive learning (Engeström, 2010), in which learning is conceptualized as a collective activity that enables the creation of new forms of practice. Engeström’s (2010) notes that his expansive theory of learning builds from activity theory, as well as from Bateson’s notion of double-bind and level-III learning, and Bakhtin’s ideas about multivoicedness.
There are similarities as well as differences between Kaptelinin and Nardi’s (2009) and Engeström’s (2001) set of principles based on activity theory. Kaptelinin and Nardi’s principles of object-orientedness, hierarchical structure of activity, mediation were all reflected in Engeström’s (2001) first principle. As previously discussed, a distinction is that Kaptelinin and Nardi argued that both the subject and the object of an activity are changed through the course of activity. This perspective retains activity theory propositions established by Vygotsky (1978). The principle of hierarchical structure of activity reinforces that while objects direct activity, the actions that comprise activity are directed to goals; this proposition has a basis in Leont’ev’s (1974) work. In addition, with regard to the principle of mediation, Kaptelinin and Nardi reinforced that from an activity theory perspective, tools have both functional and developmental effects; this frame draws from Vygotsky’s (1978) work. One of the goals in this study was to understand faculty members’ beliefs about the effects of cases in learning activities; this supported understanding why they chose to use cases in their teaching.

Kaptelinin and Nardi’s (2009) principle of development aligns with Engeström’s (2001) principle of historicity. While Engeström (2001) and Kaptelinin and Nardi (2009) did not make the explicit link, the principles of historicity and development, and the approach to analyzing prior activity as a means of understanding current activity are based upon the work of Leont’ev (1978). Leont’ev qualified that human needs are generated from prior activity and cannot be understood apart from this activity. This reinforced that, from a methodological perspective, understanding of current practice must take into account the histories that shaped that practice.
Kaptelinin and Nardi (2009) offered an additional principle, which was not reflected in Engeström’s (2001) set of principles. Kaptelinin and Nardi’s principle of internalization–externalization, which has two dimensions, reflects foundational propositions in activity theory. The first dimension is that “internalization is the transformation of external activities into internal activities” (Kaptelinin & Nardi, 2009, p. 69). While Vygotsky (1978) established this principle, Leont’ev (1974) further developed the explanations about how this occurs. Kaptelinin and Nardi reinforced, “Internalization provides a means for people to consider interactions with reality through mental simulations or imagining without performing any actual manipulations with real objects” (p. 69). The second dimension of internalization, which again draws from Vygotsky’s work, is that intrapsychological development is supported through interpsychological activity. These two dimensions, collectively, are the basis of the proposition that learning occurs through activity. The kind of learning that occurs and the processes by which learning occurs are reflective of the characteristics of a learning activity.

Both Kaptelinin and Nardi (2009) and Engeström (2001) reinforced that while principles and propositions inherent in activity theory can be distinguished, the principles are nonetheless interrelated and need to be applied as a whole. Kaptelinin and Nardi also noted that despite the fact that activity theory accounts for the individual in relation to the collective, many studies that used activity theory focused on only one of these dimensions. As illustrated in this discussion, while Engeström’s (2001) and Kaptelinin and Nardi’s (2009) principles share similarities, Engeström’s (2001) principles place more emphasis on the collective. In contrast, Kaptelinin and Nardi placed more emphasis on the individual process of internalization of external activity. These variations appear to reflect difference in the foci
of their work. In designing this study, I drew from both approaches. The next section explores the characteristics of instructional design and learning activities, as specific kinds of activities, from a learning theory perspective.

**The Design of Learning Activities and Learning Activity Designs**

While the primary unit of analysis in this study was case-based learning activity designs, which are their own activity systems, the designs were at the same time the object of an instructor’s design-based activity, and need to be understood in relation to this activity. Consistent with Engeström’s (2001) third generation activity theory model, there is an inherent relationship between the object of an instructor’s design-based activity and the design product of that activity. The characteristics of each of these activity systems and their interrelationship are as follows.

**The design of learning activities.** Instructional design is a design-based activity; this type of activity is characterized by the use of a specific form of professional expertise to solve a specific type of design problem (Reigeluth & Carr-Chellman, 2009). Each field of design (e.g., architecture, engineering, education) has its own knowledge base, referent system, as well as traditions (Gibbons & Rogers, 2009). In many design-based fields, professional preparation programs support the development of specific professional design competencies. While there are formal theories related to learning and the design of instruction, this knowledge is usually held by professional instructional designers, or professional educators, not faculty members. The professional preparation program for a faculty member is the doctorate, and hence a faculty member’s expertise is associated with one or more disciplines; this knowledge base is referred to as a faculty member’s *content knowledge* (Shulman, 1986, 1987). While faculty members may possess *general pedagogical*
knowledge, their insight into how to teach within a discipline or field of study is referred to as their pedagogical content knowledge (Shulman, 1986, 1987). One of the components of pedagogical content knowledge is case knowledge related to the subject matter being taught (L.S. Shulman & J. Shulman, 2004). Historically, individual pedagogical content knowledge in postsecondary contexts has been craft based, rather than research based (Burkhardt, 2006). From a cultural-historic perspective, the history of development of faculty members’ expertise and pedagogical knowledge can be traced through construction of their biographies (Shulman, 1986). This approach recognizes the activity theory principle of historicity (Engeström, 2001), which suggests a faculty member’s interpretation of students’ learning needs, both in terms of what students learn and how to design learning activities, builds from the faculty member’s own experiences.

A faculty member, in his or her role as an instructor, is a subject in the system of designing a learning activity. A learning design is the object of the faculty member’s design activity. Kaptelinin and Nardi (2009) explained the creation of an object entails both formulating and instantiating the object (p. 156). The formulation of the object requires identifying the various needs that an object should satisfy (Kaptelinin & Nardi, 2009). The design of a learning activity needs to take into account the starting and end points, which are an interpretation by an instructor of the students’ prior knowledge and learning goals relative to this knowledge (Gravemeijer & Cobb, 2006). The difference between the starting and end points, from an activity theory perspective, is the “zone of proximal development” (Vygotsky, 1978, p. 86). Student learning needs in a particular course are a subset of collective motives, which are reflected in the stated or implicit aims or learning outcomes in a particular program of study. To understand why faculty members use cases in learning
activities, the different learning and instructional needs that were met through the use of case-based learning activities need to be identified.

**Learning activity designs.** The object of learning activities is the intended learning outcomes. Within a learning activity design, the instructor and students are both subjects. Their roles, while prescribed in the division of labour for a learning activity, are presumed to reflect an instructor’s epistemological view of learning. The tools prescribed for an activity have specific affordances and constraints (Bærentsen & Trettvik, 2002), which mediate the interaction between students, as subjects, and the object of their activity. In keeping with the propositions in activity theory, tools can be both material and psychological, and each type of tool has a different function. The community in a learning activity system may be limited to the students and the instructor, or may extend into the university (e.g., library) or the community (e.g., professional setting). The rules express constraints that the instructor places on the learning activity as the students interact with their learning community. In analyzing the interrelationship of each of these elements in a learning activity design, the analysis needs to take into account the sequence of actions and goals that comprise an activity.

While learning designs prescribe how learning is intended to occur, the degree of prescription can vary. Most learning designs are underprescribed, thus giving space for emergent activity. The boundaries of a learning design provide what Confrey (2006) referred to as a conceptual corridor, in which students move through different and individual learning trajectories (p. 145). In this regard, learning designs reflect intentions, which may or may not be realized in the instantiation or outcomes of an activity.

**Case-based learning activities.** Case-based learning, broadly speaking, can refer to any type of learning activity that uses cases. There are multiple definitions of what
constitutes a case. For example, L. S. Shulman (1986) suggested cases are representative of a larger class of things, and the association between a case and what it is an example of is theoretical. From this perspective, the use of cases in instructional contexts is a means of linking the general and particular and theory with practice (L. S. Shulman, 1986). L. S. Shulman (1986) described teaching cases as narratives that are situated in a particular place and time, which can be used to teach principles or concepts, precedents for practice, ethics, strategies, and visions of what is possible. Jonassen (2011) described a case as “an instance of something” (p. 150), and he suggested, in an instructional context, cases often represent practice examples. Jonassen also indicated that cases are the foundation of problem-based learning environments, and the function of cases in these kinds of learning activities is as problems to solve. While there are similarities between L. S. Shulman’s (1986) and Jonassen’s (2011) definitions of cases, Jonassen described the function of a case as being a problem to solve, whereas L. S. Shulman (1986) placed emphasis on the use of a case as a theoretical example. Thus, cases can be defined from different perspectives. A goal in this study was to examine how faculty members defined the word case.

Terms for case-based learning activities vary and include case study, case-based learning, case-based instruction, and case-based methods. While I found no one widely recognized typology for distinguishing between different case-based learning methods, different authors have attempted to classify these methods (e.g., Barrows, 1986; Jonassen, 2011; Kim et al., 2006). The unit of analysis in these classification systems differs, and thus each classification system offers a different analytic perspective. Jonassen (2011) suggested that a limitation of the literature on case-based learning is that much of it focuses on the content and form of case-based methods, rather than the function of cases in learning
activities. He argued that the function of a case in a learning activity is the key to distinguishing between types of case-based learning activities (Jonassen, 2011). A goal of this study was to examine the functions of cases in DEM case-based learning activities. A proposition for this study was that cases could be both objects and tools. Leont’ev (1974) noted that a challenge in the analysis of any activity system is that the boundary between tools and objects is fluid.

I am not aware of any established signature practices with regard to the use of cases in DEM postsecondary programs and there is no apparent discussion about this in the literature. Given the lack of signature practice for the use of cases in the DEM field, another goal in this study was to identify cultural-historic factors that influenced the characteristics of the use of case-based learning in DEM postsecondary programs.

**Cultural-Historic Influences on Learning Activity Designs**

Vygotsky (1978) suggested, “Learning is more than the acquisition of the ability to think; it is the acquisition of many specialized abilities for thinking about a variety of things” (p. 83). In a formal educational context, the development of domain-specific capabilities and habits is an outcome of the guided use of culturally derived tools in relation to a specified object (Vygotsky, 1978). From a developmental perspective, the use of cultural-historic tools as mediating artifacts in an activity system supports the “assimilation by the individual of methods of thought worked out by humanity” (Leont’ev, 1974, p. 60). The methods of thought are reflected in the psychological tools of a learning activity system, which shape the interaction between a subject and an object. Within DEM, as a new field of postsecondary study, cultural tools used in learning activities draw from disciplines that have informed the field of study, as well as professional DEM practice.
The disciplinary characteristics of tools and objects are reflected in Kreber’s (2009) discussion of “what ‘knowing a subject’ means” (p. 10). Referencing university contexts, Kreber (2009) suggested there are two dimensions to an academic subject. First, it “can refer to a body of knowledge or knowledge product that we look at” (Kreber, 2009, p. 11); what we look at is reflected in the object of a learning activity. Second, an academic subject can also refer to “a disciplinary lens that we look with and through” (Kreber, 2009, p. 11); what we look with and through corresponds to the tools in a learning activity system. While Kreber (2009) suggested learning disciplinary ways of thinking and doing supports the use of a disciplinary lens in other contexts, Vygotsky (1978) qualified that independent capabilities can only support development in other areas when there are elements of activities or actions are shared. Interdisciplinary and professional fields of study provide a formal means for establishing the linkages between different disciplinary ways of thinking and knowing.

While tools and objects in learning activities in university settings will reflect the disciplines that inform a particular field of study, grounding the disciplinary characteristics of a learning design solely on the epistemological structure of a discipline is problematic (Kreber, 2009). Kreber (2009) argued that the validity of generalizations about the relationship between disciplines and pedagogy is weakened when the influence of other contextual variables has not been considered; these variables include institutional and departmental cultures and practices, personal theories of teaching, and concepts of self. Kreber suggested that faculty members have their own subjective conceptualizations of their disciplines; these beliefs may differ from an a priori classification of a discipline. Doctoral
programs in the DEM field have only recently been established,\(^2\) and thus there are a limited number of people who have a doctorate in the DEM field. Therefore, a characteristic of DEM as a new field of study is that faculty members teaching in DEM programs have diverse disciplinary backgrounds, which reflect the different disciplines that have looked at disasters, their impacts, and the practice of DEM. I have seen first hand how differences between various faculty members’ conceptualizations of DEM as a field of study have shaped their perspectives of the field of study and how to teach in the DEM field; the development of a DEM program of study has required faculty members I have worked with to negotiate our way around these tensions. A goal of this study was to understand how these different cultural-historic factors influenced the use of cases in DEM postsecondary programs of study.

When comparing postsecondary DEM programs, it is also evident that institutional characteristics influence these programs. There is considerable diversity in the names of degrees awarded in the DEM field. Some programs offer separate DEM degrees, while others offer DEM as specialization within an existing degree (e.g., Public Administration). Further, DEM programs are situated in different disciplinary homes and departments within an institution. A goal of this study was to understand the pathways of these different disciplinary influences.

DEM, as a field of study, has also been influenced by the broader professional culture and context. For example, the events of September 11, 2001 in the United States have significantly influenced the conceptualization of DEM as a field of study and practice, by

\(^2\) At the time of this study, I found only 10 doctoral programs in DEM, or with a DEM specialization, in the United States on the FEMA Higher Education College List, and no DEM doctoral programs in Canada.
extending the scope of professional activity to include homeland security (Waugh & Tierney, 2007). I have not seen this shift occur in the Canadian context to the same degree. Thus, there may be differences between the disciplinary characteristics of DEM as a field of study between different universities, as well as between country contexts. In addition to disciplinary influences, professions are also understood to be an influence on the design of learning activities in programs that have an applied orientation.

L. S. Shulman (2005) suggested professional preparation programs, as a distinct type of postsecondary studies, prepare students for “three fundamental dimensions of professional work—to think, to perform and to act with integrity” (p. 52). Within certain professionally oriented programs of study (e.g., law, business, medicine), pedagogical approaches that are unique to a field of study and common across institutions are found. These methods are called signature pedagogies (Shulman, 2005). The development of signature pedagogies within professional preparation programs reflects that there are shared beliefs with regard to what students should learn, as well as to how to best support this learning. L. S. Shulman (2005) suggests common elements of signature pedagogies in the professions are they (a) support internalization of ways of thinking and development of habits; (b) require demonstration of capabilities in roles similar to professional practice, with requisite accountability to others; and (c) develop abilities to work with uncertainty. While the research grounding the construct of signature pedagogies was based on analysis of methods of teaching in professional preparation programs, L. S. Shulman (2005) acknowledged signature pedagogies are prevalent in all levels of education. A growing body of literature explores the construct of signature pedagogies within traditional disciplines as well as a diverse array of fields of postsecondary study (Chick, Haynie, & Gurung, 2012; Donald,
2002; Gurung, Chick, & Haynie, 2009). Within this literature base, the construct of signature pedagogy is interpreted as being related to distinctive forms of pedagogical practice that support the development of expertise in a particular field or domain. Critiques of the construct of signature pedagogies share many of the same concerns expressed about the construct of disciplinary pedagogies. Donald (2009) suggested, “Signature pedagogies imply idiosyncratic organizations, artifacts and practices … [and] that the differences lie not merely in the distinctive identifiers, but in much larger worldviews (or Weltanschauung)” (p. 46).

The constructs of disciplinary and signature characteristics of pedagogy are in many ways synonymous, as they both infer that certain characteristics of pedagogical practice are unique to a discipline or field of study and common across institutions. Key differences between these two perspectives are (a) the cultural-historic community of practice (i.e., discipline vs. profession) that informs and shapes pedagogy; (b) the inclusion of a moral and value-based dimension in the construct of signature pedagogies; and (c) assessment of the pragmatic implications and outcomes of signature pedagogies, whether they be for professional preparations programs or traditional disciplines such as history. Given the complementary nature of these two frames of reference, the framework for signature pedagogy can be viewed as contributing to what Engeström (1999) referred to as a “cycle of expansive learning” (p. 25) of understanding pedagogical practice in higher education settings. Given the history of development of DEM as a field of study, a proposition informing this research is that the characteristics of case-based learning activities in DEM postsecondary programs are reflective of DEM professional activity, as well as the disciplines that have informed DEM as a field of study.
An affordance of the use of activity theory as a lens for examining the characteristics of learning activity designs is it takes into account that the different elements in learning activities, as a system, reflect different perspectives (the principle of multivoicedness) and have different histories (the principle of historicity). As activity theory is grounded by a constructivist epistemology, it can account for diverse ideological perspectives about the nature of a discipline as well as personal theories of learning, and purposefully situate these views in relation to historical narratives and traditions. The next section will examine three different approaches to the use of cases in different fields of study, and in doing so will shed further light on the cultural characteristics and historical influences on these approaches to the use of cases in learning activities.

**Cultural Characteristics of Case-Based Learning Activity Designs**

As noted in the introduction in Chapter 1, the use of cases in postsecondary programs has a long history. Within certain fields of study, such as law, business, and medicine, there are distinct signature practices associated with the use of cases. The use of cases in postsecondary programs includes, but is not limited to, signature approaches. Analysis of existing signature case pedagogies helps to shed light on reasoning for distinctive characteristics of the use of cases in different fields of study.

While there are differences in the signature case methods in the fields of law, business, and medicine, these signature practices have a shared history. The *case method* emerged as an alternative instructional practice at the Harvard Law School in 1870, prompted by the perceived deficiencies of traditional educational practice for teaching law (Garvin, 2003). The case method, as originally developed by Langdell (as cited in Garvin, 2003), a professor and dean at Harvard, was grounded in the belief that students’ deep understanding
of the core principles upon which laws were based was best developed through their study of original legal cases. Thus, the object of the activity influenced which cases were selected for study. In the legal case method, students are first presented with a case (as a tool); they then move through a process of individually, and later collectively, interpreting and analyzing the case (as an object). Using a Socratic method, the instructor (as the more knowledgeable other) questions students’ thinking about the case, with the goal of deepening students’ reasoning about the case and their understanding of the core principles that the particular case was an instance of. Educators deemed this inductive approach to learning law to be a means to support the development of mastery of law; this approach was influenced by the broader culture at the time, which valued inductive empiricism (Garvin, 2003). Refinements of the legal case method now support the use of multiple cases, “typically selected because they appear to conflict with each other and require subtle, textured interpretation” (Garvin, 2003, p. 58); this adaptation supports students’ ability to deal with ambiguity.

The Harvard Business School was established in 1908 (Cruikshank, 1987). Donham (as cited in Cruikshank, 1987), who was a graduate of the Harvard Law School, was appointed as Dean of the Business School in 1919. Early in his tenure as dean, Donham (as cited in Cruikshank, 1987) sought to employ pedagogy analogous to the case method in the business school (see also Garvin, 2003). Cruikshank (1987) explained that motives for developing case-based methods of instruction as new way of teaching in the business school included students’ expression of lack of relevance of their program of studies as well as the inadequacy of the teaching abilities of the faculty members. To address these deficiencies, Donham (as cited in Garvin, 2003) advocated for the use of a problem-based learning method that would develop students’ business acumen, which was interpreted as “making and
implementing decisions, often in the face of considerable uncertainty” (p. 60). There was no ready source for cases, as in the law school, and so instructors were engaged to script cases, which were designed to focus on real and contextualized issues or problems (Cruikshank, 1987; Garvin, 2003). The student’s role in a business case is to assume a specific management position and to make decisions based on the information provided; the scope of information presented about a case can vary (Jonassen, 2011; Mauffette-Leenders, Erskine, & Leenders, 2007). The problem-based orientation to the use of cases in the business school led to the adoption of the term problem method, but over time, the problem books created to support the application of the problem method came to be referred to as case books, and the method became known as the case method (Cruikshank, 1987; Garvin, 2003). Other universities later adopted the case method of instruction used at the Harvard Business School; the spread of the adoption of the case method was supported by the development of cases books and case libraries.

In the 1950s, the case method was adapted for use in medical education at Harvard. The Dean of Medicine at the time, Daniel Tosteson (as cited in Garvin, 2003), sought to improve the design of medical education, which lacked a means of connecting the study of science with the practice of medicine (Garvin, 2003). Tosteson (1979) suggested an improved design should incorporate three elements: (a) the core ideas that all physicians need to know, (b) emphasize on problem solving and information management, and (c) encourage self-directed learning (pp. 693–694). In the medical school adaptation of case-based learning, the instructor presents initial case material, which then serves as a prompt for further student inquiry following a structured process; additional case material is presented in an iterative fashion to stimulate further inquiry (Barrows, 1986, 1996; Hung, Jonassen, & Liu, 2008;
Savery, 2006). The inquiry activities present students with the opportunity to work individually and collectively, and to gain the knowledge needed to understand the issues present in the case. In the 1970s, medical educators at McMaster and other universities further refined the use of the case-based learning in medicine (Barrows, 1996; Hung et al., 2008; Savery, 2006). The use of cases as problems to solve led to the use of the term problem-based learning (PBL), rather than case-based learning, for the description of the learning activity design. While the functional use of cases in both business and medicine is “cases as problems to solve” (Jonassen, 2011, p. 150), there are distinct differences in the object of the case-based learning designs. The differences in the objects reflect variances in interpretation of the nature of professional activity in each of the distinct fields, as well as students’ learning needs relative to these professional activities.

The use of cases as a signature pedagogy has been supported through (a) training and certification in the use of established case-methods; (b) electronic case-libraries that provide widespread access to teaching cases; and (c) journals, books, and conferences that promote and advance practice with particular approaches to the use of cases in different fields of study. Over time, general principles and practices associated with signature methods for the use of cases have been developed to guide in using case methods in other fields of postsecondary study (e.g., Lynn, 1999), as well as in secondary study (Wassermann, 1994); this guidance is primarily based on the signature practice for the use of cases in business programs. Other literature offers general guidance on the use of cases as problems to solve (Boud & Feletti, 1991; Evenson & Hmelo, 2000; Jonassen, 2011); this literature base draws from signature approaches to the use of cases as well as other PBL methods.
Discussion about the characteristics of case-based learning in the fields of law, business, and medicine illustrates needs and motives for the use of cases and how these are reflected in the characteristics of case-based learning activity designs. From an activity theory perspective, the function of cases in each of the signature methods is relative to the object of the case-based learning activity. A commonality in the objects of the case-based learning activities is they are designed to develop the competencies associated with professional practice. The development of case-based learning activities as signature pedagogies in the field of law, business, and medicine was based on consideration of the following questions: What is the nature of professional activity in this field? What is the nature of professional expertise in this field? What form of learning design supports development of this expertise and prepares students for a life of practice? These kinds of questions have become central to scholarly inquiry about the signature characteristics of pedagogy, both in analyzing ‘what is’ as well as exploring ‘what might be.’ Furthermore, these are the same kinds of questions that are asked when using activity theory to inform the design of authentic learning activities (Jonassen & Rohrer-Murphy, 1999).

Summary

The purpose of this chapter was to expand on the conceptual framework for this study and to situate it in relation to relevant literature, as well as in relation to DEM as a new field of study and an emergent profession. The study was grounded by a constructivist epistemology and used cultural-historical activity theory as the primary lens for examining the characteristics of the use of case-based learning activities in postsecondary DEM programs, and theorizing about what the distinct characteristics of the use of cases in these programs might be. In addition, I detailed some of the ways in which the conceptual
framework shaped the research activity. The next chapter will describe the methodology and methods for the study in more detail.
Chapter 3: Methodology and Research Design

This chapter presents the final research questions for this study, explains the methodology and rationale for the study design, as well as the design and approach to the implementation of the design. I integrated the use of case study, as a research method, with elements from design-based research methods in the design of this research study. The particular approaches to these methods were derived from the theoretical framework for the study, as well as the specific research questions that this study sought to address. As this study involved human subjects, I submitted requests for ethics approval to the university I attended as a student as well as the university at which I work and teach. The management of ethical issues and my role as a researcher in this study is explained in this chapter. The chapter concludes with a discussion of the limitations of this research study.

Research Questions

The research questions for this study reflected both theoretical and practical aims. The research questions and subquestions for the study were refined through the conduct of the study; the iterative development of research questions was in keeping with a qualitative approach to research design (Creswell, 2007, p. 43). The study addressed the following final research questions and subquestions:

1. How and why do faculty members participating in this study use case-based learning in their teaching in disaster and emergency management postsecondary programs?
   - What are faculty members’ reasons for using cases in their teaching?
   - What are the different ways faculty members use cases in their teaching?
• What are the characteristics of faculty members’ case-based learning activity designs?
• What needs and motives are reflected in the characteristics of the case-based learning activity designs?

2. What cultural-historic influences are reflected in the characteristics of faculty members’ case-based learning activity designs?
• What are the influences of the faculty member and institution in which they work on the characteristics of case-based learning activity designs?
• What disciplinary influences are reflected in the characteristics of case-based learning activity designs?
• What are the influences of DEM as a profession on the characteristics of case-based learning activity designs?

3. What instructional design guidance can be derived from this study’s findings to inform a theoretically grounded approach to the use of cases in learning activities in DEM postsecondary programs?

The answers to the first two questions contribute to new knowledge about the use of cases in DEM postsecondary programs. The answer to the third question, in keeping with the pragmatic aims of this study, demonstrates the potential utility of the findings from this study.

**Methodology and Rationale for the Study Design**

The literature on research methods associated with the use of activity theory advocates for qualitative approaches without prescribing specific methods (Engeström, 2010; Kaptelinin & Nardi, 2009; Yamagata-Lynch, 2010). Kaptelinin and Nardi (2009) argued that
the methods for a research study based on activity theory need to stem from the research questions. The first question in this research study was how and why faculty members use cases in their teaching in DEM postsecondary programs; the use of how and why questions aligned with the use of case study as a research method (Yin, 2014). The methodological approach to the use of case study, as a research method, was informed by activity theory, which takes into account the cultural-historic influences on learning activity designs. A particular affordance of the use of case-based research methods is they examine phenomena as situated in specific contexts. Thus case-based methods are also suitable for addressing the second research question, which focused on understanding cultural-historic influences on the design of case-based learning activities.

The third research question, which had a pragmatic orientation, focused on exploring how the study findings could be used to develop instructional guidance for the use of cases in DEM postsecondary programs. Methods of framing instructional design guidance, and standards for this guidance, have been established in the design-based research literature. The development of theoretically informed and empirically grounded instructional guidance based on the study findings is in keeping with the kinds of assertions that can be made from a multicare research study. The particular approaches that informed the development of the case- and design-based research methods as used in this research study will now be described in more detail.

**Design-based research methods.** Design-based research in the education field is defined as “a series of approaches, with the intent of producing new theories, artifacts, and practices that account for and potentially impact learning and teaching in naturalistic settings” (Barab & Squire, 2004, p. 2). Design-based studies are situated in relation to extant
learning or instructional theory (Wang & Hannafin, 2005). The unit of analysis (e.g., learning
designs, technology use, curriculum design) in a design-based study can vary (van den
Akker, Gravemeijer, McKenney, & Nieveen, 2006). This study used activity theory as the
orienting framework for examining faculty members’ practice with regard to the use of cases
in their teaching and the characteristics of their learning activity designs. Studies that explain
models of practice are recognized as fitting within the broad genre of design research
deliverables (Kelly, 2006), and with developmental, rather than validation design-based
research studies (Nieveen, McKenney, & van den Akker, 2006).

Edelson (2006) suggested that what educators can learn from design-based research is
“warranted theory” (p. 101), which includes domain theories, design frameworks, and design
methodology. An initial assumption in this study was the findings would support the
development of a design framework for the use of cases in learning activities in DEM
postsecondary programs. Through the conduct of this study it became apparent the findings
supported the development of domain theory, as well as a design framework.

Edelson (2002) explained a domain theory “is a theory about the world, not a theory
about design per se. As such, it is descriptive, not prescriptive” (p. 113). He went on to
explain that context theories and outcomes theories are the two kinds of domain theories that
can be generated through design-based research (Edelson, 2002). The findings of this study
supported the development of an outcome theory, which “characterizes a set of outcomes
associated with some intervention” (Edelson, 2002, p. 113), as well as the ways to achieve
the outcomes. Goals in this study were to understand the kinds of learning outcomes
associated with the use of cases in DEM postsecondary programs and how cases support
achievement of these learning outcomes. The use of activity theory, as the orienting
framework for this study, supported the development of theoretical assertions about the kinds of learning outcomes that can be achieved through the use of cases in DEM programs, as well as theoretical assertions about how cases support learning in relation to these outcomes. While the outcomes theory developed as a product of this study is context dependent (i.e., use of cases in DEM programs), some of the theoretical assertions underpinning the theory were found to be context transcendent (e.g., assertions about how cases support learning).

Edelson (2002) defined a design framework as being “a generalized design solution” (p. 114). As Edelson (2006) noted, a design framework is based on domain theory. In this regard, the form of guidance in a design framework is substantive design principles (van den Akker, 1999), which “are heuristic guidelines to help others select and apply the most appropriate knowledge for a specific design task in another setting” (Nieveen et al., 2006, p. 153). As van den Akker (2006) explained, substantive design principles (a) articulate the purpose and function of a design intervention (e.g., object and function of cases in learning activities) in a specific context (e.g., DEM postsecondary programs); (b) provide guidance about the characteristics of the intervention; and (c) substantiate the guidance with theoretical and empirical arguments. The method of developing the generalizations reflected in design principles is analytical generalization (van den Akker, 2010), which is one of the methods of generalization used in multicase research methods (Yin, 2014).

While this research study did not follow the design-based research method involving iterative cycles to formulate, implement, and study a particular type of design in situ, it was nonetheless a study about how and why a certain type of learning activity is used in practice. As previously noted, a recognized method for examining how and why questions is case-
based research (Yin, 2014). The particular approach to the use of case-based research methods in this study will be described in the next section.

**Case-based research methods.** While Creswell (2007), Merriam (1998), and Stake (2005) each offered insights on case study research methods and their application in educational contexts, Yin’s (2009, 2014) approach provided more explicit guidance on how the use of an *a priori* theory influences the design of a research case study. Given the role of activity theory in framing this study, Yin’s (2014) approach to case study as a research method provided the primary guidance for design of this inquiry. Stake’s (2006) approach to the analysis of multicase research studies was of particular value in the later stages of cross-case analysis.

Yin (2014) defined case study as “an empirical inquiry that investigates a contemporary phenomenon (the ‘case’) in depth and within its real-world context” (p. 16). In this research study, the phenomenon investigated was faculty members’ reasoning for and approaches to the use of case-based learning activities in their teaching; hence each faculty member was a “case” for study. Research case studies can investigate a single case or multiple cases; this research study utilized a multicase design. The rationale and methods for case selection will be elaborated on later in this chapter.

Yin (2014) stated case study research methods “can embrace different epistemological orientations” (p. 17), which reflect the specific theory that informs a research study. While case-study methods can include both quantitative and qualitative approaches, the use of qualitative methods in this inquiry aligned with the constructivist epistemological orientation of this study, and with the use of activity theory. The theoretical framework for a qualitative study is understood to shape all aspects of the study design, including the framing
of research questions and the methods of data collection, analysis, and interpretation of study findings (Merriam, 1998). In particular, the use of *a priori* theory in the design of a research case study is an influence on the types of generalizations that can be made from the findings of a study. The method of generalization from research case studies is *analytic generalization*, which can either (a) advance theoretical propositions established during the design of the study or (b) emerge from new concepts developed during the conduct of the study (Yin, 2014). Both of these methods of generalization were used in this study.

In accordance with Yin’s (2014) guidance, the development of the design for this research study included the following five elements: (a) research questions, (b) study propositions, (c) units of analysis, (d) logic of linking data to propositions, and (e) criteria for interpreting the findings from the study. The design also addressed ethical considerations, role of the researcher, and study limitations, which are other standard elements of a research study design (Creswell, 2007). The research questions were presented at the beginning of this chapter. The remainder of the chapter will describe how the other elements were manifest in the design and conduct of this study.

**Study Propositions**

Yin (2014) suggested the focus on theory development prior to the conduct of a research study is a factor that distinguishes case study research from other qualitative methods such as ethnography or grounded theory. The development of theoretical propositions at the beginning of the research design process provides guidance on what data need to be collected and the strategy for data analysis (Yin, 2014). The use of theoretical propositions in a research design serves to strengthen the *external validity* of a research study, while the use of a rival theory, or propositions that consider alternative perspectives,
serves to strengthen *internal validity* of a study (Yin, 2014). Theoretical propositions are inherently bounded and delimit a research study.

Yin (2014) stated the framing of propositions provides “the logic whereby case study findings can extend to situations outside of the original case study, based on the relevance of similar theoretical concepts or principles” (p. 237). The propositions for this study build from recognized principles of activity theory, as proposed by Engeström (2001) and Kaptelinin and Nardi (2009), who interpreted and further developed the core tenets of activity theory from their different research perspectives. The activity theory principles and associated theoretical propositions served as the starting point for development of the propositions for this study. Some of the propositions for this study were more concretely described than others; for some of the principles, the purpose of this study was to inductively develop propositions about causal relationships, rather than to predict them. As previously discussed, the development of theoretical propositions at the outset of an inquiry is a standard practice in design-based research studies in the education field.

The following seven principles from activity theory framed the propositions for this study: object-orientedness, hierarchical structure of activity, mediation, internalization–externalization, development, multivoicedness, and historicity. The first five of these principles and the associated propositions focused the collection of data to support analysis of how and why each faculty member used case-based learning in his or her teaching. The sixth and seventh principles (multivoicedness and historicity) provided a frame for analysis of the cultural-historic factors that influenced how and why faculty members used cases in their teaching. Given that there are rival explanations about the cultural-historical influences on learning activity designs, the propositions associated with the principles of
multivoicedness and historicity took into account four variables what were understood to influence the characteristics of a learning activity design; a purpose of this study was to examine how these four factors influenced the different elements of case-based learning designs. While each principle is distinct and explains a dimension of activity theory, the principles are necessarily interrelated. The principles and associated propositions for this study are presented in Table 1. While the principles and propositions were proposed at the outset of this study, some were further developed during the initial analysis of the data; refinement was needed to further focus the analysis of the data. Additionally, I had originally included Engeström’s (2001) principle of contradictions in the propositions for this study. While this principle is frequently used in the application of activity theory to study learning activities, it became evident through the initial analysis of the data that a focus on contradictions did not support answering the study questions.

Table 1

*Activity Theory Principles and Propositions, and Propositions for this Study*

<table>
<thead>
<tr>
<th>Activity Theory Principles &amp; Propositions</th>
<th>Associated Propositions for this Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Object-orientedness</strong> (Kaptelinin &amp; Nardi, 2009): 1.1 Objects differentiate and constrain learning activities. The function of an object is to motivate and direct activity.</td>
<td>1.1 Objects differentiate and constrain learning activities. It is expected there will be some similarities, as well as differences, in the types of objects of case-based learning activities.</td>
</tr>
<tr>
<td>Activity Theory Principles &amp; Propositions</td>
<td>Associated Propositions for this Study</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>1.2 Needs are the motives for activity.</td>
<td></td>
</tr>
<tr>
<td>Needs originate from prior activity.³</td>
<td>1.2 The objects of learning activities reflect a faculty member’s interpretation of students’ learning needs relative to (a) a particular dimension of a course and (b) the collective motives of the program of study.</td>
</tr>
<tr>
<td>2. The hierarchical structure of activity (Kaptelinin &amp; Nardi, 2009):</td>
<td>2.1 A learning activity is comprised of a series of actions that are directed towards goals.</td>
</tr>
<tr>
<td>2.1 While activities appear to be directed towards their objects, an activity is comprised of individual actions directed towards goals.</td>
<td></td>
</tr>
<tr>
<td>3. Mediation (Kaptelinin &amp; Nardi, 2009):</td>
<td></td>
</tr>
<tr>
<td>3.1 The function of tools, which can be both material and psychological, is to mediate a subject’s interaction with an object.</td>
<td>3.1 The mechanics of how cases, as tools, mediate learning is not predicted; rather, it was a goal of this study to explore faculty members’ beliefs about how cases support learning.</td>
</tr>
<tr>
<td>3.2 Tools are a mechanism by which social knowledge and experience from within a culture are transmitted in the course of an activity.</td>
<td>3.2 Tools are reflective of the disciplines that inform DEM a field of study discipline and DEM as a profession.</td>
</tr>
<tr>
<td>3.2 Cases, as tools, are instances of the phenomenon that are the object of study. It is expected there will be common characteristics as to what constitutes a case in learning activities in DEM programs.</td>
<td></td>
</tr>
</tbody>
</table>

³ These last two propositions about needs, which Kaptelinin and Nardi (2009) explored in some depth, were not framed in their principle of object-orientedness, but nonetheless serve to explain the basis of the formulation of objects.

4.1 Activity, which is first carried out on the external plane, is the process by which learning and *intrapsychological* development occurs.

4.1 A learning activity design reflects a faculty member’s beliefs about how learning occurs and how cases support learning; these beliefs may or may not be congruent with established learning theories.


5.1 The developmental changes expected to occur through the course of learning activities are reflected in explicit or implicit learning outcomes, which become the object of a learning activity.

5.2 The disciplinary characteristics of learning activities reflect the state of development of a field of study at a particular time.


6.1 The elements of learning activity designs reflect the agency of the faculty member, including his or her disciplinary background, teaching philosophy, and perception of DEM as a field of study and profession.

6.2 The elements of learning designs also reflect (a) the institution at which the faculty member teaches, (b) disciplines that have informed DEM as a field of study, and (c) DEM as a profession.

6.3 The elements in an activity system reflect “multiple points of view, traditions and interests” (Engeström, 2010, p. 136).

6. The elements of learning activity designs have a history, which includes the history of (a) the faculty member who designed the activity, (b) the psychological and material tools that shaped the activity, and (c) the DEM program at the university in which the faculty member is situated.


7.1 Learning activity designs have a history, which includes the history of (a) the faculty member who designed the activity, (b) the psychological and material tools that shaped the activity, and (c) the DEM program at the university in which the faculty member is situated.

*Note.* DEM = Disaster and Emergency Management.

**Units of Analysis, Case Selection, and Ethics Management**

As previously discussed, Engeström (2009) suggested the minimal unit of analysis when using activity theory includes two interrelated activity systems. Given the cultural
agency of the subject in an activity system (Kaptelinin & Nardi, 2009), the primary unit of analysis in this study comprised the faculty members who participated in the study, and the embedded units of analysis were their case-based learning designs. Faculty members design activity and the resultant learning activity designs are considered to be two inter-related activity systems.

Case selection. Yin (2014) suggested the logic for selection of multiple cases follows replication logic, rather than sampling logic, with each case selected because it is either a literal or a theoretical replication of the others. Given faculty members’ agency in the formulation of learning activity designs, their disciplinary backgrounds were hypothesized to be a primary influence on the disciplinary characteristics of learning activity designs, while variables related to the university context in which they are situated were expected to be a secondary influence. Based on these assumptions, cases of faculty members who had the same disciplinary background would be literal replications of each other, while cases of faculty members from different disciplinary backgrounds would be theoretical replications. The way in which the theoretical propositions for this study influenced the selection of cases and expected replication logic will now be explained.

Programs offering a graduate degree in the DEM field initially bounded the case selection. As I found only 53 master’s level programs in October 2011 on the FEMA list of postsecondary programs offering DEM programs in the United States (FEMA, n.d.), additional criteria for the selection of cases was required. Given the formative state of development of DEM as a field of study, addition inclusion criteria included (a) full-time faculty members who teach in an institution offering a doctoral program in DEM in the United States or a master’s program in DEM in Canada (there are no doctoral programs in
the DEM field in Canada as of yet) and (b) faculty who have also made scholarly contributions to the discussion of DEM as a field of study or the professionalization of the field of DEM. These criteria built from assumptions the state of development of DEM as a field of study or discipline would be more advanced at an institution that offered a doctoral program and faculty members whose scholarly work included writing about the development of the field would have given considered thought to what the characteristics of DEM as field of study are or might be.

In October 2011, the FEMA College List (FEMA, n.d.) listed nine universities that offered doctoral programs in the United States. I reviewed the web biographic details and scholarly contributions of the faculty members teaching in these institutions to determine which faculty members’ scholarship included activity related to the development of DEM as a field of study or practice. I identified a total of 12 faculty members at nine institutions in the United States as meeting the inclusion criteria. There are no doctoral programs in the DEM field in Canada, and so this restricted case selection to institutions offering master’s degrees. At the time of this research, only two institutions in Canada offered master’s programs in DEM; one is the institution where I teach and the other is York University. One faculty member from York met the inclusion criteria. Thus, there were 13 potential cases. The disciplinary backgrounds of these faculty members, based on their highest degree, were as follows: (a) four had doctoral degrees in sociology, (b) three had doctoral degrees in DEM, (c) the other individuals had doctoral degrees in urban policy and public planning, political science, international studies, geography, and engineering management, and (d) one had an master’s degree in physics. Hence, there was a potential for both literal replication of cases based on the disciplinary backgrounds of the faculty members.
I found variations in the master’s and doctoral degree types offered within the 13 potential cases. I assumed these variations would permit analysis of how the disciplinary attributes of the DEM degree at an institution influenced the characteristics of case-based learning activity designs. Due to the formative state of development of DEM as a field of study, many programs are situated in other disciplinary departments (e.g., political science), and some of the degrees offered reflect the affiliation with a particular discipline (e.g., the Master of Public Administration program with a specialization in DEM). Further, each institution may have a different perception of the learning outcomes associated with a DEM degree. I expected the influence of these different disciplinary orientations to be reflected in the program learning outcomes, and in turn the course objectives as well as the objects and tools in case-based learning activities.

I invited the 13 faculty members who met the inclusion criteria to take part in this research study by sending a letter of invitation and consent form to all potential participants. Eight faculty members agreed to participate. Due to university privacy policies, one participant was not able to share copies of case-based design materials, and this person was later excluded from the study. The profiles of the seven faculty members who participated in the study did not afford the opportunity for literal comparisons to be made (e.g., how two different sociologists use cases in their teaching), and thus the seven cases, based on faculty members’ profiles, are all considered theoretical replications. However, two of the degree programs are of the same type (Master of Science in Emergency Management), and the degrees at these two institutions are both situated in a separate DEM department at their respective universities, rather than in a different departmental home (e.g., public administration). Thus, two of the cases can be considered literal replications, based on the
degree type and departmental home, while the others are considered theoretical replications.

Disciplinary characteristics of the faculty members, degree type, and departmental home for the DEM degree included in this study are summarized in Table 2.

Table 2

*Disciplinary Profiles of Study Participants and the Programs and Departments at Their Institutions*

<table>
<thead>
<tr>
<th>Disciplinary background based on highest academic credential</th>
<th>Degree type at the institution where the faculty member works</th>
<th>Departmental home for the DEM degree</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cases in the United States</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PhD in Emergency Management</td>
<td>MSc in Emergency Management</td>
<td>Department of Emergency Management</td>
</tr>
<tr>
<td>PhD in Urban Policy and Public Planning</td>
<td>MSc in Emergency Management</td>
<td>Department of Emergency Management</td>
</tr>
<tr>
<td>PhD in Sociology</td>
<td>MSc in Fire and Emergency Management</td>
<td>Department of Political Science</td>
</tr>
<tr>
<td>PhD in International Studies</td>
<td>MPA with specialization in Emergency Management</td>
<td>Department of Public Administration</td>
</tr>
<tr>
<td>PhD in Political Science</td>
<td>MPP with specialization in Emergency Management</td>
<td>Department of Public Management and Policy</td>
</tr>
<tr>
<td>DSc in Engineering Management</td>
<td>MSc in Engineering Management</td>
<td>Department of Engineering Management</td>
</tr>
<tr>
<td><strong>Case in Canada</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSc in Physics</td>
<td>MA in Disaster and Emergency Management</td>
<td>Faculty of Liberal Arts &amp; Professional Studies</td>
</tr>
</tbody>
</table>

*Note.* DEM = Department of Emergency Management; DSc = Doctor of Science; MA = Master of Arts; MPA = Master in Public Administration; MPP = Master of Public Policy; MSc = Master of Science; PhD = Doctor of Philosophy.

**Ethics management.** Given the use of human subjects in this study, I required ethical approval before contacting potential study participants. As I am both a faculty member at Royal Roads University and a student at the University of British Columbia – Okanagan, I
sought and received ethics approval at both universities prior to the conduct of the individual interviews.

As previously mentioned, I sent a letter of invitation and consent form to the 13 potential study participants via their university email address. The letter of initiation outlined (a) the study purpose and method; (b) criteria for participant selection; (c) participant expectations (e.g., two interviews, providing samples of case-based learning activity materials); (d) benefits and risks of participation, (e) confidentiality, and (f) use of the study results. The research ethics boards assessed there to be minimal risk to participants in this study. Given the nature of the research, and in particular the characteristics of the dependent and independent variables in the study design, I explained the need to identify participants in the final research report and other publications or presentations resulting from the research study, noting that final consent to use a participant’s name would be sought after each faculty member had read a final draft of his or her own case study report. Additionally, study participants were asked to confirm if additional ethics approval from their own institution was required; they all indicated this additional level of approval was not required.

I recorded the interviews with research participants using an iPod touch and a digital voice recorder. While the initial letter of invitation explained the interviews would be electronically recorded, I confirmed study participants’ consent for recording the conversation at the beginning of each interview. I conducted one of the first interviews in person, and all of the other interviews were conducted via telephone or Skype™ (Microsoft, 2016), depending on the preference of the participant. I sent the iPod files to a professional transcription service.
The interview files and other data for this study sent to me by the study participants were stored on a password-protected computer in my home office, and I ensured the files were regularly backed up to a separate password-protected hard drive and to my personal directory on the computer system at Royal Roads University.

**Data Sources and Data Management**

Yin (2014) suggested, regardless of the sources of evidence collected, there are three key principles of data collection in a research case study. The first principle is to collect multiple forms of evidence, which allows for *triangulation* of the data and supports *construct validity* (Yin, 2014). Research data for this research case study included (a) biographical information about the faculty member, as described on their resume and on the university website; (b) two interviews with each faculty member, which were recorded and professionally transcribed; (c) artifacts provided by the faculty member that described or illustrated the participant’s different approaches to the use of case-based learning designs; (d) readings and resources for participants’ case activities, which I obtained after the interviews (e.g., copies of articles and books used in the case activities); and (e) notes that I had made during the conduct of the study. While these different sources of data allowed for what Yin (2009) referred to as *converging lines of inquiry* about the case-based learning designs being studied, from the perspective of activity theory, the different data sources contributed to a multivoiced understanding of faculty members’ learning designs as activity systems. In conducting this study, I did not incorporate observations of the implementation of the case-based learning activities; rather, I assumed that characteristics of learning activity designs and reasoning for these designs could be understood from discussions with faculty
members, analysis of their case-based learning designs, and the materials used in their learning activities.

The second principle of data collection was to create a case study database; this contributed to the reliability of the study (Yin, 2009). The main structure for the electronic database for this study, which was kept on a password-protected computer, was as follows: (a) proposal, (b) dissertation, (c) literature review, (d) ethics materials, (e) concept maps, (f) propositions, (g) participant selection, (h) case study data, (i) single-case analysis, and (j) cross-case analysis. Each of these sections of the database also had standardized structure. The use of the database proved to be invaluable in the conduct of the research, as I both collected and generated a large volume of data through the study.

The third principle of data collection, which also supported the reliability of the study, was to maintain a chain of evidence that would allow an independent party to trace the findings and conclusions, as well as citations to the data, back to the database itself (Yin, 2009). In addition to the use of citations referencing data sources, I utilized the structure of the database and implemented a numbering system for the computer files to establish a clear chain of evidence for the study.

**Data Analysis and Criteria for Interpretation of Findings**

Engeström et al. (1999) stated, when using activity theory, the analytic strategy needs to take into account both the subject’s and the researcher’s views of the activity system; this integrated perspective contributes to a multivoiced construction of the system (or systems) being studied. The subjects’ views provide an emic perspective, while the researcher’s view provides an etic perspective. This balance between inductive and deductive approaches to data analysis is also an approach used in design-based research studies (McKenney, Nieveen,
van den Akker, 2006). The theoretical framework for this study informed the analytic strategy and methods.

Yin (2014) spoke to the necessity of having a general analytic strategy developed in advance of the conduct of the study to demonstrate how internal validity is to be established. Three of his four general analytic strategies supported the analysis of the data for this study: (a) examining data from the ground up, (b) analysis based on theoretical propositions, and (c) development of case descriptions (Yin, 2014). Yin (2014) offered a fourth possible analytic strategy, examining rival explanations. Rival explanations were accounted for and framed within the propositions for the study (e.g., different cultural-historic factors influencing learning activity designs).

Yin (2014) described five specific analytic techniques for analyzing data; the three most relevant to this study included pattern matching, explanation building, and cross-case synthesis. There were six stages to the analysis of the data collected during this study: (a) first interview and supplementary data analysis, (b) case-based learning activity design analysis – Part 1, (c) second interview data analysis, (d) case-based learning activity design – Part 2, (e) writing the individual faculty member reports, and (f) cross-case analysis of the individual faculty member reports. Each of these stages of this study will be described in turn.

**Stage 1: First interview and supplementary data analysis.** I conducted the first interviews using a semistructured interview format, with the interview questions being designed to support answering the research questions. The interviews were between 45 minutes and 1 hour in length. Following completion of the interviews, I sent the electronic files to a professional transcription service. I created an interim individual faculty member
case report (Miles & Huberman, 1994) using the notebook template in Microsoft Word as a tool for organizing the interview data and as a framework for integrating other data about the faculty member, his or her university, and his or her approach to the use of cases in teaching. This approach aligns with Yin’s (2014) general analytic strategy of developing a case description. The report template included the following five main categories that built from the conceptual framework and propositions shaping the study: (a) faculty member profile, (b) institutional and student profiles, (c) faculty members’ perceptions of the characteristics of DEM as a field of study, (d) faculty members’ perceptions of the characteristics of the DEM as a profession, and (e) case-based learning activity designs. There were multiple iterations of each interim case report; a sequential numbering scheme for these reports supported maintenance of a chain of evidence throughout the conduct of the study.

To build the case reports, I reviewed each transcript from the first round of interviews, and then cut and pasted questions and answers from a copy of the transcript into the appropriate category of the interim report template. The topics from the interview questions became initial subcategory labels. For example, subcategory labels under the section on ‘faculty member profile’ included ‘disciplinary background,’ ‘professional experience,’ ‘teaching experience,’ ‘teaching philosophy,’ and ‘factors influencing teaching philosophy.’ The cut-and-paste method ensured that all interview data were transferred to the initial report. This first version of the report was saved, and a copy was created to use for the second version of the report. I integrated additional data from the faculty members’ resumes and from the program web pages into the appropriate sections of second version of the report before it was analyzed.
The focus of the analysis for the second draft of the report was to identify the key dimensions of a faculty member’s responses to the questions. The general analytic strategy I used was both inductive (working the data from the ground up) and deductive (use of theoretical propositions). I read through the report at least twice and attached initial labels to meaningful chunks of texts, and in some instances I italicized or highlighted keywords or phrases. A chunk of data included several sentences or a part of a sentence. The labels I used were primarily descriptive, and in some instances in vivo labels were used (Miles, Huberman, & Saldana, 2014, p. 74). This first step of the analysis was inductive, and the descriptive labels were primarily, but not always, unique to a specific case. For example, the labels for description of one faculty member’s professional experience included ‘perception of experience,’ ‘policy and legislative work,’ and ‘local community experience’; these labels were unique to this particular case. In contrast, several participants spoke about their ‘experience as a student’ being a strong influence on their teaching philosophy. While the particular type of student experience that influenced a faculty member’s teaching philosophy was unique, ‘experience as a student’ was a descriptive label that appeared in more than one case. Similarly, when describing their disciplinary backgrounds and areas of expertise, many faculty members spoke about events or people that influenced their thinking about the field. I labeled the associated chunks of data with the codes ‘influence’ and ‘shift’; these labels are considered to be causal and explanation pattern codes (Miles, Huberman, & Saldana, 2014). I also deductively applied interpretive pattern codes relating to the conceptual framework and propositions for the study in the analysis of the data; these codes came from the elements in activity system (i.e., subject, tools, object, rules, community, division of labour), structure of activity (e.g., action, goal), or another aspect of the conceptual framework (e.g., disciplinary
characteristic). I continued reading within and across cases until no further revisions of labels were required. I then saved this second version of the report.

The purpose of the third version was to draft the narrative for the individual faculty member case reports to capture the findings from the previous stage of analysis (e.g., description of a faculty member’s professional experience, reasons for the use of cases). I noted gaps in information needed to complete the analysis so they could be addressed in the second interview. One of the main gaps was specific information about each of the different examples of how faculty members used cases in their teaching. Very few of the faculty members had documentation that fully described a learning activity; as such, I needed to obtain further information about the designs through conducting a second round of interviews.

Stage 2: Case-based learning activity design analysis – Part 1. During the conduct of the first interview, I asked faculty members to describe their various approaches to the use of case-based learning activities in their teaching. Through discussion, the participants and I agreed on a number of case activities that exemplified each of their different approaches to the use of cases in their teaching. I requested faculty members send me copies of the course syllabus and any other documentation or material related to each example. The degree of documentation received for any particular case activity varied considerably.

There were two goals for the initial analysis of the case-based learning designs. The first was to describe the particular case (or cases) associated with each activity and to identify the sources of the case material. The second goal was to identify and describe the sequence of actions and goals that comprised the activity. I developed a Microsoft Word document template to capture these dimensions of a case activity. Through this analysis process, I
identified gaps in information and framed questions for the second round of interviews, as in many instances the sequence of actions and goals could not be understood from the data available.

**Stage 3: Second interview and data analysis.** I did not use standard questions for the second interview; rather, the goal of the interview was to obtain the information needed to complete the analysis of how and why faculty members used cases in their teaching and what the cultural-historic influences on the characteristics of their learning activity designs were. The gaps in information shaped the questions and approach to the interview. I handled the transcriptions from the second interviews in the same way as the data from the first interview. Once again, I created categories using the notebook template in Microsoft Word, and I cut and pasted interview questions and responses from a version of the transcription into the appropriate categories. I then saved this version of the second interview report.

The bulk of the information from the second round of interviews included narrative descriptions of the case-based learning activity designs and participants’ reasoning for these designs. The analysis of the faculty members’ descriptions of their case-learning designs focused on coding chunks of text that pertained to (a) the elements of an activity system (i.e., object, subject, community, rules, division of labour, tools); (b) the structure of activity (i.e., actions, goals); and (c) other elements of activity theory (e.g., needs, motives, outcomes, student starting points, zone of proximal development). As the analysis progressed some of the labels became more refined. For example, I refined the label for tools to include tool availability and tool selection.

**Stage 4: Case-based learning activity design analysis – Part 2.** I considered existing tools for the analysis of learning activities from an activity theory perspective, such
as Mwanza’s (2001) eight-step model and Kaptelinin and Nardi’s (2009) activity checklist; however, the tools did not sufficiently frame the analysis in ways that would support answering the research questions, so a new tool needed to be created. I developed a Microsoft Word document template to support analysis of each of the 37 different examples of case-based learning activities provided by faculty members. The structure of the template, which was iteratively revised during the use of the tool, was similar to Mwanza’s (2001), but included questions to capture the needs and motives as reflected in object of the activity and other elements in a learning activity design.

The data for this stage of the analysis included (a) transcripts from the first and second interviews, (b) documentation about the case activity as provided to me by the faculty member, (c) readings and resources as referenced in the case activity design obtained by me, and (d) my initial case activity analysis documentation. I transferred the data from these different sources to the relevant sections of this new template. I then identified themes within the data using the constant comparative method (Merriam, 1998). My goals were to (a) create a description of the characteristics of each learning activity from an activity theory perspective, and (b) identify the learning and instructional needs that were the motives for the different elements in each case-based learning activity design. I focused the analysis of data pertaining to the activity structure on depicting the sequence of actions and goals that comprised each of the learning activities examined in this study.

*Constant comparison* of the data across the different case activity designs of each individual faculty member supported further refinement of the needs-based reasoning for the object and the design of the activity; this analysis was supported by the use of an additional Microsoft Word document table to identify needs that were common to all of a faculty
members’ case-based learning activity designs (e.g., need for a case to be a realistic example of something) and those that were limited to certain designs (e.g., need for a case to relate to students’ interests). In instances in which a need was limited to a particular design, I noted the conditions related to how this need influenced the learning design. The goal of the data analysis was to identify (a) similarities and differences between the characteristics of the objects, tools, and activity structures of each individual faculty member’s case-based learning designs and (b) how characteristics of the activity designs reflected the faculty member, the institution in which he or she teaches, and DEM as a field of study and a profession.

**Stage 5: Writing the individual case reports.** Gravemeijer and Cobb (2006) noted *thick description* supports the ecological validity of the research study by enabling others to understand the specifics of a case. Given the propositions for this study, the information in each of the faculty member’s case reports presented (a) a description about the faculty member and institution in which he or she teaches, which supported the analysis of the cultural-historic factors that influenced the characteristics of the faculty member’s approach to the use of case-based learning and (b) the findings from the analysis of each of faculty member’s examples of the different approaches to the use of case-based learning activities in his or her teaching. Each of the case reports helped to identify (a) how and why faculty members use case-based learning activities in their teaching and (b) what cultural-historic influences are reflected in the characteristics of faculty members’ case-based learning activity designs. These case reports used a standard structure with the following main headings:

- faculty member profile,
- university profile,
• case-based learning activity designs, and
• cultural-historic influences on the activity designs.

Once completed, I sent each faculty member participating in the study a copy of his or her case report for review and feedback. The feedback received was primarily related to matters of fact (e.g., dates, names). In addition, I asked faculty members to reconfirm their permission for their names to be used in the case study reports; all faculty members reconfirmed their consent. Having study participants review the final draft of their case reports contributed to the internal validity of this research study (Merriam, 1998). The individual faculty member case reports are presented in Chapter 4.

Stage 6: Cross-case analysis of the individual case reports. The goal of this stage of the analysis was to provide final answers to the first two study questions based on a comparative analysis of the findings of each of the individual faculty member case reports. Through constant comparison of the findings of each of the sections of faculty members’ case reports, I identified similarities and differences as well as reasoning for the differences. During this stage of the analysis, I followed Yin’s (2014) method to iteratively test and revise the study propositions (p. 149). I then compared and discussed the cross-case findings about how and why faculty members use cases in their teaching in relation to (a) established signature methods for the use of cases in the fields of law, business, and medicine and (b) established systems for classification of problem- and case-based learning activities. This comparison served to situate the findings about how cases are used in the DEM field in relation to extant practice and theorizing about practice. The cross-case findings about the cultural-historic influences on the characteristics of case-based learning activities were discussed in relation to literature about the influence of disciplines and professions on
pedagogical practice in postsecondary institutions. Further, I discussed and compared the characteristics of faculty members’ case-based learning activity designs in relation to their perceptions of what the central characteristics of professional DEM practice are and should be. The cross-case analysis is presented in two chapters. Chapter 5 presents the cross-case analysis, discussion, and summary response to the question about how and why faculty members use cases in their teaching in DEM postsecondary programs, and Chapter 6 presents the cross-case analysis, discussion, and summary response to the question about the cultural-historic influences on the characteristics of faculty members’ case-based learning activity designs.

Stage 7: Development of instructional design guidance for the use of cases. The final stage of analytic work in this study was to develop instructional guidance for the use of cases in DEM postsecondary programs that built from the study findings and discussion as well as my interpretation of these findings. In keeping with the methods of generalizing as established in design-based research methods, I developed an outcome theory and design framework for the use of cases in teaching in DEM postsecondary programs; this framework is presented in Chapter 7.

Researcher Role and Bias

Merriam (1998) stated, “Because the primary instrument in qualitative research is human, all observations and analyses are filtered through that human being’s worldview, values, and perspective” (p. 22). This section will describe the ways my worldview, values, and perspectives influenced my role as a researcher. My role as a researcher was to design the study, complete the ethics applications, conduct the interviews, analyze and interpret the data, draw conclusions, and provide recommendations. My influence on each of these
different tasks, as well as ways of managing the inherent bias, will be discussed in this section.

My disciplinary background has been shaped, in part, by my formal educational studies. While I have a Bachelor of Fine Arts (Printmaking) degree, my graduate studies have all been in the education field. I have a Master of Education degree (adult education), and, in 2009, I began doctoral studies at the University of Calgary in the Doctor of Education program, specializing in education technology. It was in a course called *Technology Enabled Learning Environments* delivered by Dr. Gail Kopp that I was first introduced to activity theory. My understanding of activity theory has been informed by my reading about the theory, as well as by my experience in using the theory as a tool for designing learning activities in the courses I teach. My experience with using activity theory, which aligns with my own epistemological beliefs, biases me to using this theory. While my approach to using activity theory draws from literature that discussed the methodological implications and offered procedural guidance, my approach to the use of activity theory delimited the design of this study, as well as my approach to interpretation of the study findings.

The study questions reflected my personal interests and motives. First, for pragmatic reasons, I wanted to link my research to my teaching work. I have been teaching in the Master of Arts in Disaster and Emergency Management (MADEM) program at Royal Roads University as a full-time faculty member since 2009. I use cases in my teaching and have used learning theory, as well as literature on problem- and case-based learning, to design a multiday case study activity, which generally follows the method used in medical schools. Second, my interests in case-based learning, as explained in Chapter 1, also come from my professional experience. My experience with responding to disasters began with the 1987
Edmonton tornado, and my last major response was the 2004 Indian Ocean tsunami, where I took on the role of Country Director for the Canadian Red Cross disaster recovery program in Indonesia for a 2-year period (2005–2007). My expertise in the DEM field, developed through over 25 years of experience, is fundamentally case based. I believe people can learn vicariously through the case experience of others, and because an emergency manager’s experience is inherently place based, learning from the experiences of others is of critical importance to the advancement of practice. I am curious about how and why people learn from cases, and want to know more about how cases can be used effectively in the DEM field. This curiosity, along with the desire to do research related to my work, led me to focus my research on case-based learning in the DEM field.

My primary interest, given that I teach in a MADEM program, was on studying the use of cases in master’s degrees. My initial thought was this study could be delimited to these applications. While the inclusion criteria focused on faculty who taught at institutions offering graduate degrees in the DEM field, some faculty members’ teaching assignments included undergraduate DEM courses. The inclusion of these applications of the use of cases contributed to development of knowledge about the difference between the use of cases in graduate and undergraduate programs.

The greatest potential for bias in this qualitative study was in the analysis and interpretation of the data. During the conduct of the interviews, I took care to use active listening skills, and I reframed my interpretation of what I had heard at different times throughout the interviews. While the transcripts provided a verbatim record of what the participant said, reframing in the interview allowed me to identify whether or not my early interpretations of what was said reflected the participant’s perspective. The study findings,
while supported by quotes from study participants, nonetheless reflect my construction of both etic and emic perspectives. While these represent different perspectives, they are both my interpretations. I addressed the internal validity of the study by sharing the case reports with the faculty members and inviting them to comment on my interpretations.

**Study Limitations and Assumption**

While case study research methods limited the types of generalizations that could be made from this research study, another limitation was that the study engaged a limited number of participants who have a particular set of practices related to the use of cases in their teaching. Thus, the assertions made in answering the study questions were limited to my interpretation of how and why the seven particular faculty members participating in the study used cases in their teaching, and what the cultural-historic influences on their practices were. While I found similarities in practices, there were also differences, and each case made unique contributions to this study. Thus, if any one of the faculty members had not participated in the study, the findings would be different. From this same perspective, the inclusion of other participants would have changed the study findings in some way. In this regard, the findings from this study cannot be presumed to be reflective of the broader practice of the use of cases in DEM postsecondary programs; rather, the findings provide insight into practices associated with the use of cases in the DEM field.

One assumption I made in the design of this study was that knowledge developed through research about the practice of using cases in DEM programs can be shared and is of value to others. While the findings and resulting instructional design guidance are expected to have relevance for those who teach in the DEM field in postsecondary settings, the particular relevance is limited to the degree that users of this research can apply it within
their own contexts. The degree to which context variables have been accounted for in the design principles is another factor influencing the utility of the instructional design guidance offered. The validity of the instructional design guidance can be tested through dissemination and discussion within the broader DEM postsecondary community.

Another limitation in the design of this research study was that it did not fully follow Yin’s (2014) recommendations for the use of a rival theory. The use of a rival theory strengthens the validity of the study findings because it demonstrates consideration of alternative perspectives (Yin, 2014). The use of a rival theory requires identification of an alternative theory for explaining the phenomenon of interest, with the theory being selected because it challenges assumptions embedded in the design of the case study (Yin, 2014). While I understand the value of utilizing Yin’s (2014) approach in case-based research methods, I saw limited value in using a rival theory to frame the design of this research study; rather, I utilized the function of activity theory as an orienting theory in the study. However, rival perspectives were considered in the framing of the second research question about the cultural characteristics of case-based learning activities. The literature review established that the characteristics of learning activity designs could not be solely attributed to the characteristics of a discipline, and that other factors influenced disciplinary characteristics (Donald, 2009; Kreber, 2009). Thus, I took alternative perspectives into account in the design of this portion of the study. An opportunity in future research would be to study the use of cases from a different theoretical perspective.
Chapter 4: Individual Faculty Member Case Reports

This chapter presents the findings that informed the answers to the first two questions in this study:

- How and why do faculty members use case-based learning in their teaching in disaster and emergency management postsecondary programs?
- What cultural-historic influences are reflected in the characteristics of faculty members’ case-based learning activities?

The chapter is comprised of seven individual faculty member case reports. Each of the case reports follows a standard structure, which includes the following sections: (a) faculty member profile, (b) faculty member’s view of DEM as a profession (c) university profile, (d) faculty member’s case-based learning activity designs, (e) cultural-historic influences on case-based learning activity designs, and (f) unique attributes of faculty member and their use of cases relative to others in the study. The inclusion of these individual reports in this dissertation gives the reader the opportunity to draw their own naturalistic conclusions (Stake, 1995) about the patterns across the seven reports, and to compare his or her interpretations to my answers to the first two research questions, which are presented in Chapters 5 and 6.

The development of the individual case reports was an iterative process, with insights gained from one report contributing to the understanding of other reports. Two of the insights gained through the cross-case analysis are reflected in terminology used in this chapter to describe the characteristics of case-based learning activities. The first insight was that objects of learning activities could be distinguished based on whether the intention was to develop students’ knowledge about something or knowledge of how to do something. Scardamalia
and Bereiter (2006) used this frame for distinguishing between the types of knowledge to be developed in learning activities. They asserted knowledge about something includes both declarative as well as procedural knowledge; knowledge of something is a richer form of knowledge, in that it implies the ability to use knowledge to do something (Scardamalia & Bereiter, 2006). The terms *knowledge about* and *knowledge of* will be italicized whenever they are used to describe the objects of learning activities.

The second insight related to differences between the functions of cases in learning activities. The function of cases could be for their *intrinsic* or *instrumental* value. This frame for distinguishing between the functions of cases was a surprise, as the reference comes from terminology used by Stake (1995) in his writing about case-based research. Stake’s (1995) frame for distinguishing between the functions of cases was found to be of greater value than Jonassen’s (2011) schema for classification of the function of cases. The distinctions between the intrinsic and instrumental functions of cases will be discussed in more detail in the first case report in this chapter, and the reasoning for the use of Stake’s (1995) frame will be discussed in further detail in Chapter 5.

**Case Report #1: Dr. Jessica Jensen**

At the time of the interviews for this study, Dr. Jessica Jensen was Assistant Professor and Graduate Program Coordinator in the Department of Emergency Management at North Dakota State University (NDSU). As one of the first people to earn a Doctor of Philosophy (PhD) in Emergency Management, Jensen has worked, both as a doctoral student and as a professor, to advance the state of emergency management as its own discipline.

Jensen’s case report presents the findings from the analysis of data from four sources: (a) interview transcripts, (b) printed biographical information, (c) DEM program description
from the NDSU university website, and (d) copies of Jensen’s course syllabi and course materials. Materials received through personal communication with Jensen are cited in this case report using the participant codes in Table 3, whereas materials available to the public are directly cited.

Table 3

Participant Codes for Personal Communication Data Sources Cited within Jensen’s Case Report

<table>
<thead>
<tr>
<th>Code</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>JJ-I1</td>
<td>Transcripts from 1st interview with Jensen conducted on June 25, 2012.</td>
</tr>
<tr>
<td>JJ-I2</td>
<td>Transcripts from 2nd interview with Jensen conducted on March 11, 2013.</td>
</tr>
<tr>
<td>JJ-CM1</td>
<td>Course materials EMGT 101: Worksheets given has handouts for the EMGT 101 course, documents received by email July 17, 2012.</td>
</tr>
</tbody>
</table>

*Note.* EMGT = University code for courses in the Emergency Management program.

**Faculty member profile.** This section of the case report describes Jensen’s disciplinary background and areas of expertise, as well as her teaching experience and teaching philosophy. Jensen’s formal education includes a Bachelor of Arts (BA) in Political Science (in 2004), a Master of Science (MSc) degree (in 2007), and a PhD (in 2010) in Emergency Management. Her graduate studies were at NDSU, which is one of only a few universities to have a separate Department of Emergency Management and to grant doctoral degrees in this field. Jensen’s view of emergency management as a field of study was shaped and informed by her experience as a graduate student at NDSU (JJ-I1). Jensen’s research and
scholarship have focused on topics related to emergency management as a field of practice as well as a field of study (Jensen, n.d). She has also written about the differences between multi- and interdisciplinary approaches to teaching emergency management and argues emergency management needs to develop and be recognized as its own discipline, which focuses on “how human beings create, interact, and cope with hazards, vulnerabilities, risks and the events associated with them” (JJ-I1; see also Jensen, 2011, p. 20). To advance the development of emergency management as a discipline, Jensen has led focus groups and written reports for the FEMA Higher Education Project on topics such as the Disciplinary Purview of Emergency Management (Jensen, 2012a), Research Standards in Emergency Management (Jensen, 2012b), and Scholarship and Research to Ground the Emerging Discipline of Emergency Management (Jensen, 2013). In addition to these scholarly activities, Jensen served as a research consultant with International Association of Emergency Managers and authored numerous technical reports for them (Jensen, n.d.; JJ-I1). She has also been engaged with local emergency response and recovery efforts and offers her expertise to local organizations (JJ-I1).

Jensen spoke about her teaching experience and teaching philosophy during the first interview; her responses, as presented here, are based on the analysis of the transcripts from the interview (JJ-I1). Jensen said she started teaching at NDSU in 2006 when she was a master’s student and that by the time she became a doctoral student she was teaching full time in the program. Her PhD in Emergency Management, Jensen explained, gives her flexibility to teach more broadly across the emergency management program than other faculty members in the department and this has resulted in her being responsible for more of the courses in the emergency management program than her colleagues.
Jensen said her teaching philosophy revolves around “three Ps – preparation, pedagogy, and passion” (JJ-I1). Her preparation includes creating a “story arc” (JJ-I1) for the course as a whole, and for each module within a course. Jensen described preparation for each class as being time intensive, as she will read and synthesize from 40 or more articles related to the topic for one class, drawing from different disciplines and methodologies. Her goal is to be able to present students with a sense of what is empirically known about the phenomenon that is the object of study as well as the factors that positively or negatively influence the phenomenon. She suggested this is the standard of practice and knowledge base needed for emergency management to be its own discipline. From a pedagogical perspective, Jensen said she tries to use a mix of different activities and present information in more than one way, with the goal of being able to develop students’ knowledge from a foundational to more advanced level. Jensen said an early influence on her understanding of this approach to instruction was Jones and Pfeiffer’s (1975) model of learning. Jensen draws practical knowledge about the design of instruction from reflection about her own experience as a student and feedback from her own students. Jensen described the final component in her teaching philosophy as being to bring “this insane passion that I have for the field of study and for the emerging profession” (JJ-I1) and through this to convey the value of this knowledge in students’ lives and future careers.

**Views of DEM professional activity.** During the first interview Jensen was asked to describe her perception of (a) the primary focus or object of DEM activity, (b) the characteristics of expert thinking in the DEM field, and (c) the ethics and values that should guide DEM professional practice. Her responses, as presented here, are based on the analysis of the transcripts from the interview (JJ-I1).
The focus of emergency management activities is facilitation and coordination, Jensen said, with facilitation being a slightly more significant dimension of the work. With regard to how experts in the field think, Jensen noted the operating environment in which emergency management professionals work is complex, and professionals need the ability to analyze (a) how the social, political, economic spheres are interrelated and influence the policy context and (b) what can or cannot be done to deal with hazards and vulnerabilities in a given organization or community. Information about these diverse elements needs to be synthesized and integrated, Jensen said. Given the nature of the operating environment, professionals need to be able to “think in a flexible, problem-solving way” (JJ-I1) and adapt their approach based on the opportunities and constraints in a given context, Jensen said.

Jensen’s responses about values and ethics that should guide the profession related to process and outcomes. Values, she suggested, begin with the emergency manager’s view of self. Consistent with the focus of emergency management activity, an emergency manager, Jensen suggested, needs to value and see himself or herself in the role of facilitator rather than decision maker. As a facilitator, she explained, emergency managers need to value the participation of different stakeholder groups, as well as the importance of working through a process to reach consensus. While taking into account different perspectives, an emergency manager, Jensen said, must also be focused on the ultimate outcomes of their activities. Though the broader outcomes of sustainability and resilience guide the work of emergency managers, Jensen said, a manager must consider the impact of proposed strategies on people. Values that guide decisions about which options to pursue (e.g., mitigation strategies) must reflect fairness, justice and equality, Jensen said.
University profile. The emergency management programs at NDSU were first situated in the Department of Sociology and Anthropology (Jj-I1; North Dakota State University [NDSU], 2016). The initiation of emergency management programming at NDSU was driven by an institutional goal of finding ways to increase the number of doctoral programs that would support advancement of NDSU’s research ranking in the university system (Jj-I1). Two sociologists within the Department of Sociology and Anthropology had done work with the state Department of Emergency Services, thus they were aware emergency management was an emerging profession (Jj-I1). They sought advice from Dr. Wayne Blanchard at FEMA about starting a doctoral program; however, Blanchard had no advice to offer and indicated that a doctoral program in emergency management would be the first of its kind in the United States (Jj-I1). In 2001, NDSU received approval from the State Board of Higher Education to launch a minor in emergency management, and in 2003 further approval was given for NDSU to offer a bachelor’s, master’s, and doctoral degree in this field (NDSU, 2016). In 2007, the name of the department was changed to include the words “Emergency Management,” and in 2010 the state gave approval to establish emergency management as a stand-alone department at NDSU (NDSU, 2016).

Jensen suggested a unique attribute of the emergency management program at NDSU is that it is “attempting to build and deliver a curriculum based on a unique academic discipline of emergency management as something distinct from programs that envision themselves using the words ‘interdisciplinary’ or ‘multidisciplinary’” (Jj-I2). Jensen explained this approach was something that developed over time, and evolved from faculty and student engagement, particularly at the doctoral level, as they grappled with their understanding of the approach needed to understand phenomena associated with disasters.
and the practice of emergency management (JJ-I2). Jensen noted one challenge was that while research on disasters had been conducted by many different disciplines, there had been no focused research agenda, except within sociology and geography (JJ-I2). The findings from research about disasters and the practice of emergency management have not been synthesized, and research in one discipline is not building on the work of research done in other disciplines (JJ-I2). She explained the importance of this for the practice and profession of emergency management:

We could be so much further in terms of understanding these phenomena and what to do about them if people were just studying this stuff … and isn’t that going to be incredibly helpful to society? And isn’t it going to be ultimately the most helpful thing we can do for practice, [is] to study everything that there is to know about disasters and what can be done about them and what works best so that practice would have the opportunity to thrive and grow and expand and professionalize? (JJ-I2)

During the period of her doctoral studies at NDSU, Jensen noted coalescence between faculty and students that the pedagogical approach needed at the graduate level was to focus on synthesis and integration of what is known about disasters and emergency management from across diverse disciplines, and to examine the associated theories and connection of theory to practice (JJ-I2). Jensen spoke about the influence this approach had on her disciplinary development. “I had an opportunity to study the way that nobody else has, … and it’s changed the way I think and I’m something different from any other discipline, that’s for sure” (JJ-I2). Others who teach in graduate-level emergency management programs at NDSU now use this practice of synthesizing and integrating what is known about different
phenomena (JJ-I2). One of the consequences of NDSU’s refinement of what the discipline of emergency management is about is that students admitted to the graduate programs need to be academically strong and able to read and analyze research findings from across multiple disciplines (JJ-I2).

The NDSU program web pages clearly frame emergency management as a discipline that “focuses its research on the study of how human beings cope with hazard events through activities related to preparedness, response, recovery, and mitigation” (NDSU, 2016, para. 7). While the programs serve the emerging profession of emergency management, Jensen emphasized they are not professional preparation programs; rather, the programs provide students with the core body of knowledge to work in the profession or in any number of roles associated with the distributed function of emergency management (e.g., government, health, planning, engineering) (JJ-I1). Jensen’s offered her interpretation of the learning outcomes for the Master’s program in emergency management at NDSU (JJ-I1). Students need to be able to demonstrate (a) mastery of the core body of knowledge related to emergency management; (b) understanding of how this knowledge can be applied in the real world to improve practice; (c) competency in conducting original research; and (d) the problem-solving, thinking, and communication skills necessary to engage with the body of emergency knowledge and contribute to its development (JJ-I1). The delivery model for DEM programming at NDSU reflects a traditional approach to delivery, with students taking classes on campus.

**Jensen’s case-based learning activities.** Cases, to Jensen, were “anything that looks at how human beings create, interact and cope with hazards, risk, and vulnerabilities and the events associated with them” (JJ-I1). She went on to add that cases could be historical
occurrences of a phenomenon or a “real-world unfolding event” (JJ-I1). When asked to describe the function of cases in the learning process, Jensen explained case activities “help all students achieve a deeper level of understanding of the phenomena under study” (JJ-I1). Jensen explained students’ ability to apply or evaluate what they have learned against a particular case deepens their understanding of the phenomena under study (JJ-I1).

Through discussion with Jensen and analysis of her course syllabi and learning activity designs, I identified five different approaches to the use of cases in her teaching. One of the approaches was used in an undergraduate class, while the other four approaches were used in graduate-level classes. This section presents the findings from the cross-case analysis of Jensen’s five different approaches to the use of cases in her teaching. The data for analysis of her approaches included the transcripts from two interviews, as well as the course syllabi, which provided clear and detailed descriptions of the case activities. The characteristics of the objects, tools, and activity structures, along with Jensen’s reasoning for the activity designs will be described.

**Characteristics of Jensen’s objects.** This section will begin with a description of the object of Jensen’s undergraduate course case-based activity and then describe the objects of her graduate case activities. The undergraduate case activity was from a general education emergency management 101 course entitled *Emergencies, Disasters, and Catastrophes* (JJ-CS1). Jensen noted one of the aims of the course was to attract “students with very diverse backgrounds” (JJ-I2) and provide them with an introduction to the field of emergency management. The object of the case-based learning activity focused on development of students’ knowledge about historical disaster events and how they exemplified four different periods in the evolution of emergency management practice in the United States (US), as
well as knowledge about how humans, organizations and government had and could have responded, mitigated, recovered and prepared for major disaster events in the US (JJ-I2; JJ-CS1; JJ-CM1). Jensen’s motive for this case activity was for students to see the ways in which their future career paths, regardless of their field of study, were connected to emergency management (JJ-I2). This motive is reflected in the broad focus of the object of the activity.

A common characteristic of the objects of Jensen’s four graduate case activities was a focus on development of students’ knowledge of different research skills as a means of developing their knowledge about different phenomena. All graduate activities had this dual and interrelated aim. The graduate case-based activities were in three different courses:

- *Response Theory and Practice* (JJ-CS2),
- *Recovery Theory and Practice* (JJ-CS3), and

The *Vulnerability and Functional Needs in Emergency Management* course was a higher-level undergrad as well as graduate course (JJ-CS4).

The object of case activity in the *Response Theory and Practice* course focused on developing students’ competencies in evaluating and synthesizing what is empirically known about how concepts related to disaster response had evolved since the publication of Samuel Prince’s study on the Halifax Explosion in 1920 (JJ-I2; JJ-CS2). In the *Recovery Theory and Practice* course, the first dimension of object of the activity was to develop students’ competencies in analyzing the content media reports related to flooding events (JJ-CS3). This supported students’ development of knowledge about short-term recovery progress following these flood events (JJ-CS3). The object of the case-based activity in the *Vulnerability and
Functional Needs in Emergency Management course was development of students’ competencies in supporting the disaster preparedness, response, and recovery capabilities of organizations that work with populations that have special functional needs, such as seniors, people with specific health issues (JJ-CS4). This was a “live” case activity in which students conducted primary research, and hence students developed professional competencies to make cold calls to organizations, interview, analyze findings, and propose recommendations to improve organizational preparedness (JJ-CS4). While these three graduate case activities focused on development of students’ research competencies (knowledge of research) as means of developing their knowledge about a phenomenon, only the Vulnerability and Functional Needs course case included a focus on knowledge of how to apply knowledge about vulnerability and functional needs in practice. In the other two graduate courses knowledge about application to practice was an object of a separate but associated learning activity in the course.

Jensen’s fifth approach to the use of cases was a weekly reading activity; many of the readings were case-based, and hence she viewed this as a distinctly different approach to the use of cases in her teaching (JJ-I1). This approach was a common characteristic of the design of all three graduate courses (JJ-I1; JJ-CS2; JJ-CS3; JJ-CS4). The object of the reading assignments was to develop students’ competencies to evaluate, integrate, and synthesize what is empirically known about different dimensions of the phenomena that were the focus of each course (i.e., disaster response, disaster recovery, and vulnerability and functional needs; JJ-I1). Jensen noted another dimension of the object of the activity was for students to understand how the knowledge about different phenomena “can transform the practice of the profession” (JJ-I1); hence, there was an applied aim to the activity. Jensen spoke about the
motives behind the object of this type of weekly activity. Jensen asserted the need to develop higher-order thinking skills (e.g., evaluating, synthesizing) is part of the expectation of what graduate education is about, adding it was particularly important at this time for students in the emergency management field, “where theory exists but is underused and underdeveloped and in some cases needing to be articulated” (JJ-I1), and “where the very foundations of the discipline are not deeply understood and maybe not be readily agreed on by everyone” (JJ-I1). She saw current students as being at the beginning of a development cycle in terms of refining and building knowledge through their analysis of the research literature and articulating the implications of this knowledge for professional practice (JJ-I1). Hence, the object of the activity was influenced by the current state of development of the discipline as well as the needs of the professional practice.

As can been seen, the objects of Jensen’s case activities were distinguished by whether the case activity was in an undergraduate or graduate course, and by the focus of the course. The object of her undergraduate case activity was limited to a focus on development of knowledge about disaster and emergency management phenomena, while graduate-level activities focused on development of knowledge of research competencies as a means of developing knowledge about a particular phenomenon, with two of the graduate activities having an additional focus on developing student knowledge about how to apply learning from the case activity to professional practice. All of the phenomena that were the objects of study in Jensen’s case activities related to development of students’ thinking about how to approach problems associated with one or more dimensions of emergency management activity (i.e., preparedness, response, recovery). The unit of analysis within case activities
included individuals, households, organizations, communities, and various levels of government.

**Characteristics of Jensen’s cases and case tools.** The only common criterion reflected in Jensen’s selection of cases was that they link to the course and topic. Hence, the object was the primary influence in case selection. An additional criterion for case selection in the undergraduate course, for the weekly readings in all three of the graduate courses and for the Samuel Prince case in the *Response Theory and Practice* course, was that all of the cases were examples of empirical research related the object of study (JJ-CS1; JJ-CS2; JJ-CS-3; JJ-CS4). For the undergraduate course, Jensen selected cases relating to each of the four different periods in the history of emergency management in the US and provided the materials about these cases for the students to read (JJ-CS1). The *Response Theory and Practice* course case assignment required that students read Samuel Prince’s (1920) classic case about the Halifax explosion (JJ-CS2). Experts in the field have recognized Prince’s work as being “the first systematic study of a disaster” (Anderson, as cited in Scanlon, 1988, p. 214); hence it is a seminal case in the emergency management field.

The literature assigned for weekly reading in the three graduate courses drew from across the disciplines (e.g., sociology, psychology, geography, economics) that had produced research relating to the phenomenon that was the object of study each week (JJ-I1; JJ-CS2; JJ-CS3; JJ-CS4). Jensen’s approach to selection of the research literature was influenced by her view of emergency management as a unique discipline, which is in the formative stages of development (JJ-I1; JJ-I2).

The criteria for selection of the cases and case tools in the *Vulnerability and Functional Needs in Emergency Management* course and in the *Recovery Theory and
Practice course differed; case tools in these courses were primary and secondary data respectively. In the Recovery Theory and Practice course, students had to select a flood event that had a Presidential Disaster Declaration in 2011, and then find at least 50 media reports from local media sources that reported on the progress of flood recovery in the first 180 days after the event (JJ-CS3). In the Vulnerability and Functional Needs course, students had to choose a special population group (e.g., elderly) they wanted to focus on, and then identify five organizations in Fargo, North Dakota (where NDSU is located), that address the needs of that particular population group on a day-to-day basis (JJ-CS4). Students then contacted a member of each organization and arranged a time for an interview. Each organization was thus a case, and students’ notes from the interviews became data for analysis of the cases. In both the Recovery Theory and Practice and Vulnerability and Functional Needs courses case activities, Jensen tightly bounded the criteria for case and case tool selection, while the selection of cases and collection of data related to the case was the responsibility of students. In the Vulnerability and Functional Needs course, students also required knowledge of the research literature regarding disaster-related needs of populations with functional concerns and what organizations serving these populations can do to prepare for, respond to, and recover from disaster events. Much of this literature was included in the assigned readings for the course (JJ-CS4).

The characteristics of Jensen’s cases and case tools reflect the diversity of the objects of the case-based activities across the four courses. Cases studied included historical disaster events, recent events, and live cases. Case tools included disaster research literature and limited selection of grey literature, much of which was case based, as well as primary and
secondary data relating to the cases. The next section will explain the structure of each of Jensen’s five different approaches to the use of cases in her teaching.

**Characteristics of Jensen’s case-based learning activity designs.** Each of Jensen’s case-based learning activity designs was prescribed in detail in the course syllabi. During the two interviews she explained the motives for the activity designs and expanded on the description of these case activities. The structure of her case-based activity designs all varied; this reflected the diversity of objects and courses in which the case-based activities were used. The characteristics of each of her different activity designs will be described to illustrate the variety of her approaches to the use of cases.

There were two parts to Jensen’s undergraduate case activity design. For the first part of the activity, students (subjects) worked in teams (division of labour) to research a significant disaster associated with one of four identified periods of emergency management history in the US, with a focus on analyzing what happened, the impacts of the event, what people did or could have done in relation to one of the four phases of emergency management (i.e., response, mitigation, recovery, and preparedness), and identifying how the particular disaster exemplified the period of emergency management being examined (JJ-CS1). Teams then presented their findings in a multimedia format (rules) to the class and had to engage the class in an activity or discussion to test or apply the knowledge they gained from the various team presentations (JJ-CS1). Each team presentation was to be focused on one particular phase of emergency management practice (JJ-CS1). Jensen stated her motive

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4 Given that activity is comprised of actions directed towards goals, the various actions that were found to make up an activity have been italicized to help the reader identify the actions in the learning activity. This pattern of italicization is used throughout chapter four in the descriptions of the structure of case-based learning activities.
for the design for this activity was as much about supporting student learning as it was about making learning interesting and attracting students from outside of the program to take the course (JJ-I2).

Jensen’s syllabus for the Response Theory and Practice course stated each class was a combination of lecture by the professor, guided discussion about the assigned weekly readings, and on-the-spot responses that were designed to test students’ understanding of the core foundational ideas related to the material covered in the course (JJ-CS2). Jensen spoke about her expectations for the weekly reading and discussions. Students, she said, “had all these cases, and their job was to evaluate them individually and then to integrate them and synthesize across them to look for some sort of metacategory of knowledge” (JJ-I1). This approach was something she “had been doing for a long time” (JJ-I1) and she used this same activity to prepare for every class. She acknowledged this was a different kind of case-activity design, and spoke about the outcomes of the activity. “I just found that to be an incredible experience to go through with them … and I saw such a change in them” (JJ-I1). This same pattern of activity related to the weekly readings was used in the other two graduate courses, and hence reflects a characteristic of Jensen’s style of pedagogy in her master- and doctoral-level courses.

Jensen’s other case activity in the Response Theory and Practice course involved the use of a historical case. The course syllabus described the assignment related to this case (JJ-CS2). The core action and goals were as follows. After reading Samuel Prince’s 1920 case about the Halifax Explosion, students selected a concept or finding presented in the study, and after obtaining the instructor’s approval of the concept, conducted a literature review that examined the evolution of the concept or finding from 1920 to date, assessed the
strength of the literature reviewed, and *discussed* the implications of the literature reviewed for emergency management as a field of study or practice. A rule was students needed to have a minimum of 20 references for their paper; these could include some of the assigned course readings. The Prince case introduced students to early research about disaster response, thus situating how response was conceptualized in 1920.

The case activity in the graduate *Recovery Theory and Practice* course, which was described in the course syllabus (JJ-CS2), was primarily an individual assignment that had six major deliverables. For this case-based activity, students *selected* a location that received a Presidential Disaster Declaration for flooding in 2011, *collected* 50 or more news stories from local media outlets about the flood event and what happened afterwards, *proposed* categories and criteria for analysis of the content of the media stories (Deliverable 1), *submitted* information about the flood event, the disaster declaration, and media’s coverage of the flood event (Deliverable 2), and *created* and *submitted* an electronic file with links to the 50 or more stories that were published within 180 days of the event by local media (Deliverable 3). The format for electronic submission of the data was prescribed. The class as a whole *came to consensus* on what categories and criteria would be used for the content analysis of the media reports; Jensen *facilitated* this discussion. She then *created* a spreadsheet file and *explained* how to use the file to document students’ analyses of content of the media reports. Students *completed* their analysis of the media articles and *submitted* the spreadsheet file (Deliverable 4). Finally, students *submitted* an outline for a case study report (details for the report were prescribed; Deliverable 5), and then *submitted* a final case study report (Deliverable 6). A later assignment in the course required students to make a *presentation* comparing the findings from their analyses of media reports about flood
recovery with the findings from their analyses of the research literature about factors that could be used to assess recovery progress in a community.

Jensen described having multiple motives for her design of the case activity in the *Vulnerability and Functional Needs in Emergency Management* course. The overarching design was based on the premise emergency management is a distributed function in society and the work done by organizations that support vulnerable populations “is more fundamental, more important than anything they [students] will ever do” (JJ-I2). Hence, her motives for the activity design were for students to value and appreciate the work done by these organizations and to understand organizations’ particular roles in the distributed function of emergency management. The case was designed, Jensen explained, to emulate the work emergency managers needed to undertake with these organizations. Jensen asserted, [Students] have to be able to interact with groups somewhat cold, and they’ve got to be able to talk to them; they have to be able to use a line of questioning or some sort of tact to be able to advocate and influence the preparedness of that organization. (JJ-I2)

Jensen also wanted students to be able “to test and … analyze what’s going on in the organization in relation to what the literature suggests” (JJ-I2); this is needed to address the issues that people with functional needs may have in relation to preparing for, responding to, and recovering from a disaster (JJ-I2). The activity design for this course integrated these multiple motives (JJ-CS4). After choosing a special needs group and identifying five organizations that work with this group, students contacted a member of the organization and arranged an interview. The focus of the interview was for the students to learn about what services the organizations provided to their clients, organizations’ previous experience with
disasters, and the status of disaster preparedness within the organizations. Students were required to *submit* their interview notes; the details of what to include were prescribed. The second part of the activity was for students to *evaluate* the degree of effectiveness of organizations’ preparedness planning and to *make recommendations* for improving organizations’ planning for meeting the needs of special population groups before, during, and after a disaster. The rules specified that the evaluation and recommendations had to be grounded by the student’s *analysis* of what the disaster research literature said was needed. Through participation in this learning activity, students were acculturated into a method of professional practice.

While Jensen described other case activities during the two interviews and provided materials related to these activities, they were all variants of one of her five approaches to the use of case-based learning, as described in this case report. For example, in a previous iteration of the *Recovery Theory and Practice* course, Jensen asked students to *conduct* interviews with six county emergency managers about their role in recovery (JJ-I1). This is another example of a live case, which has a similar structure to the *Vulnerability and Functional Needs* course case activity.

Analysis of the functional use of cases in Jensen’s activity designs helps to explain the different mechanisms by which cases as tools mediate the student’s interaction with an object. The objects of Jensen’s case-based learning designs influenced her functional approach the use of cases, and hence the structure of her case-based activity designs. This reflects the proposition within activity theory that objects direct activity (Leont’ev, 1974). I identified the three main variants in Jensen’s functional use of cases. The object of Jensen’s undergraduate case activity was development of students’ *knowledge about* different periods
in the history of emergency management in the US and the emergency management practices that were in effect, or not in effect, at that time. While the student conducted an in-depth analysis of a case, the purpose was not to learn about the case per se; rather, the case exemplified phenomena that were the object of study and helped students to understand the phenomena in a concrete way. In this regard, the functional use of the case was to illustrate a specific disciplinary way of thinking about disasters. Due to the in-depth study of the case, an outcome of the activity would be students’ reconceptualization and thus deeper understanding of characteristics of disaster events. Jensen called her approach to the use of cases at the undergraduate level a “traditional case study approach” (JJ-I1) and explained that, in contrast, the cases in her graduate classes were “cases of research” (JJ-I1).

There were two main variants in Jensen’s functional approach to the use of cases in her four graduate case activities. The variations aligned with Stake’s (2005) description of the differences between the function of intrinsic and instrumental cases in case-based research methods. An intrinsic case, Stake (1995) explained, is one in which there is a “need to learn about that particular case” (p. 3). Samuel Prince’s seminal case is widely regarded as one of the first empirical studies about disaster response, and Jensen’s approach to the use of the case in the activity reflected its intrinsic value. A characteristic of Jensen’s functional approach to the use of an intrinsic case was that during the activity, the case, as a tool, became the object of an activity; the particular findings from Prince’s case were of importance to the activity.

Stake (1995) noted that while there are limits to the types of generalizations that can be made from a single case, “people can learn much that is general from single cases” (p. 85); hence, cases can also be of instrumental value. With this functional approach, a case is
“a means to understand something else” (Stake, 1995, p. 3). The functional use of cases in the readings assignments in the graduate course the Recovery Theory and Practice course and the Vulnerability and Functional Needs course all reflected Jensen’s use of cases for their instrumental value. Additionally, these three case-based learning activity designs were structured to support development of different research competencies (i.e., literature review and synthesis, analysis of media reports, multicase study) as a means of knowing about different phenomena. The focus on development of students’ knowledge of research is reflected in the structure of the case activities, and hence the case activities were a form of simulation. Given the specific and detailed structure of the case activities, the function of the cases and form of the simulation can also be understood as a form of cognitive apprenticeship focused on developing disciplinary ways of seeing, thinking, and doing. The various types of simulations reflected the differences between the objects of the activities. Jensen’s approach to design of the weekly reading activities was influenced by the current state of the discipline and her understanding and approach to what she believes is needed to build knowledge in the discipline of emergency management. The repeated actions of synthesizing and integrating, while being a form of simulation, were also a means of socializing students to the norms of the discipline. Jensen’s approach to the design of the case activity in the Recovery Theory and Practice course was a form of simulation using a different set of research skills, while the activity design in the Vulnerability and Functional Needs course was a form of simulation of professional activity. The next section will explain the cultural-historic influences on the design of Jensen’s case activities in more detail.

**Cultural-historic influences on Jensen’s case-based learning activity designs.** In keeping with the cultural-historic tenets of activity theory, propositions for this study were
that learning activity designs reflect “multiple points of view, traditions and interests” (Engeström, 2010, p. 136). This section discusses the apparent pathways of influence of the faculty member, the institution, the profession, and disciplines on the characteristics of Jensen’s case-based learning activity designs. Further, each of these different types of social agents has their own history, which may be reflected in the object, tools, and other elements of a learning activity system (Engeström, 2010, p. 136). Historical factors that appeared to influence the characteristics of Jensen’s case-based learning activity designs are also described.

**Influences on the characteristics of objects.** The objects appeared to reflect the influence of the faculty member, the institution, and the profession. The four different courses, which bound the phenomena that were the object of cases activities, reflected the diversity of Jensen’s own knowledge base and expertise. She noted her doctoral studies in emergency management gave her the ability to teach a diverse array of courses. The objects of Jensen’s case activities reflected her understanding of the differences between the focus of undergraduate and graduate study, and in particular, the need for graduate students to develop research competencies and mastery of the empirical body of knowledge related the academic subject matter for each course. The distinction between the characteristics of graduate and undergraduate learning activities also reflected established norms within academic institutions. Jensen’s view of the current state of the discipline, with the lack of synthesis and integration of the body of knowledge about disasters, was a motive that became the need for students to be able to develop specific types of analytic skills. All of her objects, while having clearly defined outcomes associated with development of knowledge about what is empirically known phenomenon pertaining to DEM, had an applied aim; this
reflected her belief about the need to put what is empirically known about DEM into practice for the benefit of society and well as the broader motives that led to the development of DEM as a field of study. The objects of Jensen’s case activities also aligned with NDSU’s view of emergency management as its own academic discipline with a specific body of knowledge, standards for knowledge development. The objects were also found to reflect the dominant way of conceptualizing emergency management practice (i.e., mitigation, preparedness, response, recovery). This conceptual frame, as previously discussed, was established by the US Governor’s Association in 1978 to help standardize terminology associated with emergency management practice. The titles of the Response and Recovery Theory and Practice courses, as well as the associated case activities, had an implicit focus on linking theory about what is known about each of these different areas of practice.

**Influences on the characteristics of tools.** Jensen’s criteria for selection of cases and case tools reflected the value she placed on empirical knowledge and research as a way of knowing about phenomena associated with emergency management. While she noted this approach was something that was developed during her own doctoral studies at NDSU, the value given to empirical ways of knowing is also a broader cultural norm within the university context.

The geographic location of the university was reflected in several dimensions of the case tools. The location of the university was a factor in the selection of cases for the Vulnerability and Functional Needs course, as this was a live case set in the local community. The Recovery Theory and Practice flood recovery cases were limited to the US context, as were the cases selected for the undergraduate course. The titles of articles and journals in the readings lists in the graduate courses did not always contain a geographic
reference; of those that did, the majority appeared to focus on research conducted in the US, although I found some exceptions.

The influence of disciplines was also seen in the characteristics of case tools. While Jensen drew many of the articles in reading from emergency management and natural hazard related journals, others were drawn from journals such as the *Journal of Urban Affairs*, the *Journal of Community Psychology*, or *The International Review of Retail, Distribution and Consumer Research*. This reflected her attention and concern about the historical lack of knowledge synthesis from across different disciplines and fields of study. While Jensen placed a focus on the use of empirical research, the constraints on case and tool selection were influenced by what has been published.

Case tools also reflected the influence of the profession. Jensen placed emphasis on emergency management being a distributed function in society and recognized the value and role of other professions and organizations in emergency management activity. Her criteria for selection of cases in the *Vulnerability and Functional Needs* course reflected this value. Different dimensions of emergency management practice (e.g., coordination of response, business recovery) were also apparent in the reading lists for her graduate classes.

*Influences on the characteristics of activity designs.* The faculty member, institution, and discipline appeared to be the primary influences on the characteristics of Jensen’s case-based learning activity designs. The designs appeared to reflect her stated teaching philosophy, including preparation (e.g., her case activity designs are all highly prescribed and clearly documented), pedagogical orientation (e.g., diversity of ways of learning through cases), and her passion (e.g., motives for undergraduate case activity design). The institution was indirectly reflected in Jensen’s approach to the use of case-based learning activities in
that all of her graduate case activity designs reflected an orientation towards the use of a cognitive apprenticeship approach to developing students’ research competencies. She based this approach on methods she learned and practised during her doctoral studies at NDSU. This is an example of the process of cultural transmission of research methodology as well as pedagogy within a particular institution. Jensen’s approach to having students contribute to the body of knowledge through synthesis and integration of knowledge about what is known about different phenomena reflected her beliefs about the current state of the development of DEM as a distinct discipline. I found limited influences of the profession on Jensen’s case-based activity designs, with the exception of the Vulnerability and Functional Needs case, which was focused on developing students’ professional competencies in working with organizations.

**Uniqueness of Jensen’s case relative to the others in this study.** I noted five unique attributes of Jensen’s case relative to the others in this study. First, she was the only participant in this study to hold a PhD in Emergency Management, and she is the only one who clearly views DEM as its own discipline. Second, NDSU was the only university to view DEM as a distinct discipline. Third, she was the only faculty member who had a structured approach to knowledge building, using cases, because of the current state of the discipline. Her motives for the design of weekly reading activities in her graduate-level courses reflected her view of the state of the development of DEM as a discipline, and the need for students to be part of building knowledge by integrating and synthesizing case knowledge from different disciplinary perspectives. Fourth, a unique pattern in the objects of several of her case-based learning activities was that they focused on development of students’ knowledge of research methods as a way of developing their knowledge about
something else. Fifth, Jensen was the only participant to provide an example of a live case study (i.e., *Vulnerability and Functional Needs* course). Finally, relative to others, Jensen’s case-based learning activity designs were all highly structured and clearly documented; this reflects one aspect of her stated teaching philosophy, which was to be well prepared for her teaching.

**Case Report #2: Dr. Jane Kushma**

Dr. Jane Kushma was appointed as an Associate Professor in the Emergency Management program at Jacksonville State University (JSU) in Alabama in 2002, and in 2010 she also took on the role of Doctoral Program Director. Kushma has a broad range of interests in the DEM field that build from her academic as well as professional experience. Her expertise includes (a) disaster management, with a focus on vulnerable populations; (b) leadership and organizational behaviour, including nonprofit organizations and volunteer management; (c) emergency management policy studies and policy implementation; and (d) service learning (JK-I1; Kushma, 2013).

Kushma’s case report presents the findings from the analysis of data from four sources: (a) interview transcripts, (b) printed biographical information, (c) DEM program description from the JSU university website, and (d) copies of Kushma’s course syllabi and course materials. Materials received through personal communication with Kushma are cited in this case report using the participant codes in Table 4, whereas materials available to the public are directly cited.
Table 4

*Participant Codes for Personal Communication Data Sources Cited within Kushma’s Case Report*

<table>
<thead>
<tr>
<th>Code</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>JK-I1</td>
<td>Transcripts from 1st interview with Kushma conducted on May 29, 2012.</td>
</tr>
<tr>
<td>JK-I2</td>
<td>Transcripts from 2nd interview with Kushma conducted on March 21, 2013.</td>
</tr>
<tr>
<td>JK-CS1</td>
<td>Course syllabus EM 866 <em>Evaluation Research</em>, Spring 2013, received by email April 9, 2013.</td>
</tr>
<tr>
<td>JK-CM1</td>
<td>Course materials EM 866: (a) <em>Public Transit and Minority Employment</em> case assignment, and (b) Research Design Questions, documents received by email April 9, 2013.</td>
</tr>
<tr>
<td>JK-CS2</td>
<td>Course syllabus EM 814 <em>Interdisciplinary Disaster Theory and Research</em>, Fall 2012, received by email April 9, 2013.</td>
</tr>
<tr>
<td>JK-CM2</td>
<td>Course materials EM 814: Final Exam, document received by email April 9, 2013.</td>
</tr>
</tbody>
</table>

*Note.* EM = University code for courses in the Emergency Management program.

**Faculty member profile.** This section describes Kushma’s (a) disciplinary areas of study, (b) professional DEM experience, and (c) teaching experiences and philosophy.

Kushma’s educational studies included the traditional fields of psychology and sociology (BA in 1976), as well the applied fields of social work (Master of Social Work in 1979), urban policy and public administration (PhD in 2001). Following completion of her undergraduate degree, Kushma was employed in a variety of front-line social work positions (Kushma, 2013; JK-I1). In 1981, she started working for the American Red Cross at the local Chapter in Dallas, Texas. She stated, “[This is where I first] cut my disaster teeth, because … there sure were a lot of floods and tornados” (JK-I1). In 1982, she was recruited to work at the Red Cross regional operations headquarters in Missouri as a disaster specialist, and in 1985 she began working at the Red Cross national headquarters in Washington, DC (JK-I1). During her time in Washington she took responsibility for development of the Mass Care Annex for the first US Federal Disaster Response Plan (JK-I1). Through her positions at the
Red Cross she gained extensive experience with disaster response, including mass care and sheltering, and disaster recovery at the individual, family, and community levels (JK-I1). Her scholarship record reflects the diversity of her interests and experience in the disaster and management field. An example of her scholarship related to the development of DEM as a field of study was her presentation entitled *Developing Competency-Based Emergency Management Degree Programs* (Kushma & Kapucu, 2010) at the 2010 FEMA Higher Education Conference.

Kushma started teaching in emergency management at University of North Texas (UNT) in 1994. In 1999, she was recruited by the University of Tennessee at Chattanooga, which was seeking to establish a concentration in emergency management in their undergraduate degree in nonprofit management. After arriving at JSU in 2002, Kushma spearheaded the launch of an online Doctor of Science (DSc) in Emergency Management.

Kushma credits her development as a teacher to an “incredible” (JK-I1) 2-week intensive instructor training program offered by the Red Cross. Kushma explained the program provided theoretical foundations in adult learning theory (e.g., Malcolm Knowles), as well as space for practice teaching and critical constructive feedback. Kushma’s description of her teaching philosophy mirrors this approach. She believes students need to have a theoretical foundation and then be given “experiences where they can apply what they’ve learned” (JK-I1). Building from adult learning principles, Kushma said she seeks to take advantage of students’ life experiences as “really accomplished professionals” (JK-I1) by providing space for dialogue and for students to share their own valuable stories. The final thing Kushma tries to do in her teaching is to “communicate her interest in the subject and
get students excited about the topic areas” (JK-I1). The next section will describe the
emergency management program at JSU where Kushma teaches.

**Views of DEM professional activity.** Kushma described her views of the
characteristics of the emergency management profession during the first interview (JK-I1).
Unless otherwise specified, all of the quotes in this section are from JK-I1. Kushma said
emergency management work in the 21st century “is not business as usual anymore” and
professionals need to have strong skills for working with people. In particular, she said, an
emergency manager needs to have “really good facilitation skills” and must be able to create
“conditions for collaboration to occur.” This aligns with trends in public administration and
the “notion of collaborative public management.” Kushma noted that operational constraints
require emergency managers be flexible and creative in their thinking about problems they
encounter. Another important characteristic of expert thinking was systems thinking, with an
“emphasis on open systems and the interactions that occur” within the operating
environment. With respect to the values and ethics that should guide professional practice,
Kushma indicated the ultimate emphasis was on making communities safer. In doing this,
decisions have to be made about such things as the allocation of scarce resources and
determination of what is in the public good. Kushma stated the principles already laid out by
International Association of Emergency Managers (IAEM) are a guide.

**University profile.** The profile of the history and characteristics of emergency
management programming at JSU are based on the findings from analysis of the transcripts
from the first interview with Kushma (JK-I1), as well the information about the program as
presented on the university website (JSU, 2016c). Emergency management programming at
JSU started in 1998 as a concentration in the Master of Public Administration degree (JK-I1).
The suite of programming now includes a Bachelor of Science (BSc), an MSc, and a DSc in Emergency Management, as well as a concentration in the Master of Arts (MA) in Liberal Studies and Master of Publication Administration (MPA) programs (JK-I1; JSU, 2016c). The courses for all of these degrees are offered online, with the exception of the doctoral program, which requires a one-week residency for the first 3 years of the program (JK-I1; JSU, 2016a, 2016b, 2016d).

Kushma said the distance delivery model has influenced the characteristics of students who enrol in the emergency management programs, with most students being people who are working and, therefore, need the flexibility online education offers (JK-I1). Kushma noted the profile of students is diverse, with students having backgrounds in fire science, policing, and traditional emergency management roles, as well as the nonprofit and private sectors (JK-I1).

When asked to describe the disciplinary orientation of emergency management programming at JSU, Kushma said, “We’ve probably been most influenced from the public administration and sociology disciplines” (JK-I1). The public administration influence was because many emergency management jobs are situated in the public sector, whereas there is a long tradition of sociological research about disasters (JK-I1). Kushma noted students are introduced to other disciplinary perspectives during their program of study, and she draws from her social work background in the courses she teaches (JK-I1). Kushma said that while there have been advancements towards development of emergency management as its own discipline, “we’ll never ignore our interdisciplinary roots” (JK-I2). Kushma indicated an indirect, but important influence on the move toward interdisciplinarity has been the value placed on interdisciplinary research by funders like the National Science Foundation (JK-I2).
Kushma described other characteristics of the emergency management programs at JSU. Overall, Kushma explained, the program has a dual orientation: “We try to give students both theoretical understanding of disaster and emergency management, some of the social science foundations, but then we want them to be able to apply that theoretical knowledge in practice settings” (JK-I1). The application to practice, Kushma indicated, is where case studies come in (JK-I1). Application to practice, Kushma said, is not about being able to fill any one particular emergency management role; rather, it is about ensuring students are prepared to carry out a range of duties and activities (JK-I1). Kushma noted, throughout their program of studies, students are introduced to and connected with a range of different professional associations related to the practice of emergency management (JK-I1). Examples include the Association of Contingency Planners as well as the IAEM managers (JK-I1).

**Kushma’s case-based learning activities.** A case, Kushma said, is either “a disaster or some sort of emergency management activity … that demonstrate[s] the concepts that you want students to learn” (JK-I1). Kushma provided three reasons why she uses cases in her teaching. Her first reason reflected her understanding of the intrapsychological dimensions of how cases support learning. Cases bring the subject matter to life for students (JK-I1). In addition, the process of applying concepts or theory to a particular case supports students’ internalization of knowledge in a way that is different from reading a text or hearing an instructor talk about something in a classroom (JK-I1). Kushma noted,

> They remember those cases that they have studied, … and they will bring them up in class … that tells me that there’s a certain kind of learning that takes place with cases that allows student to be able to retrieve that knowledge. (JK-I1)
Kushma said thinking about and applying knowledge from cases creates a richer learning environment for students (JK-I). Kushma’s second reason for using cases in her teaching reflects her attention to the interpsychological affordances of case activities. Case activities allow students to “experience collaborating with others and solving problems … under time pressure” (JK-I), which mirrors the kind of experience they will have working on disaster operations (JK-I). Kushma’s final reason for using cases in her teaching was the affordances they provided in assessing students’ learning. “Students have an easier time applying concepts if they have something real to apply it to…. It allows them to apply the material in a more creative way than simply just answering questions on an exam” (JK-I). Hence, Kushma’s motives for using cases in her teaching reflected her understanding of how cases as tools mediate the learning process, and as well as how the affordances of cases support development of professional competencies and assessment of student learning. These different motives were reflected in Kushma’s approaches to using cases in her teaching, which were all found to be examples of the use of cases as simulations.

Through analysis of the two interviews with Kushma, as well as the course syllabi and case materials, I identified three different variations of her approach to using cases as simulations. The first two case activities were from an Evaluation Research course and the third was from an Interdisciplinary Disaster Theory and Research course. These are both doctoral-level courses. This section will begin with presentation of the findings from the cross-case analysis of the characteristics of the objects, tools, and activity designs for Kushma’s three different approaches to the use of cases in her teaching. The section will conclude by explaining the cultural-historic influences that were found to have influenced different dimensions of the activity designs.
Characteristics of Kushma’s objects. The objects of the two case-based activities in Kushma’s Evaluation Research course focused on development and assessment of students’ knowledge of research. The object of the first activity was to develop and assess students’ knowledge of how to design an evaluation research study as well as to develop students’ collaborative problem-solving skills. The second dimension of the object (develop collaborative skills) was influenced by Kushma’s decision for the activity to be team based (JK-I1). Team-based activities, Kushma explained, allowed students to “get double duty out of the case” (JK-I1). The second case activity in the Evaluation Research course was an individual exercise and focused on the need to develop and assess students’ knowledge of how to prepare a proposal for conducting evaluation research (JK-I2; JK-CM1). In contrast, the object of Kushma’s third case activity focused solely on assessment. The object of the activity was for students to demonstrate their knowledge of how to design an interdisciplinary research proposal (JK-CM2). The object of this case activity required that students “synthesize what they have learned” (JJ-I1) during the course. In conclusion, two of Kushma’s three case-based learning activities included a focus on development of students’ knowledge of different dimensions of research, while assessment of students’ knowledge was a characteristic of the object of all three activities. The objects of the case activities delimited the selection of cases and case tools.

Characteristics of Kushma’s cases and case tools. The necessary criterion for Kushma’s selection of cases was the need to link to the course and topic. The cases selected for the Evaluation Research course reflected Kushma’s preference for using “established resources for case studies” (JK-I1). Both of the cases used in the Evaluation Research course were from Electronic Hallway, University of Washington (n.d.), which is a case-based
publishing arm of the School of Public Affairs. Kushma noted both cases involve “public management type situations” (JK-I2) that provided “a really good depiction” (JK-I2) of different aspects of evaluation research. Both cases were based on real scenarios, but they were not emergency management situations.

Kushma’s case notes provided a description of the case used for the team-based activity in the Evaluation Research course. The case was called Public Transit and Minority Employment (Electronic Hallway, 2003a; Electronic Hallway, 2003b). Kushma’s description of the case to the students was as follows. “This case allows you to think about how one might study the impact of public transit on minority employment. The case deals with issues of race, urban unemployment, and the spatial mismatch hypothesis” (JK-CM1). One of Kushma’s reasons for selecting this particular case was “because of the surprise value of it” (JK-I2). She explained the second part of the case demonstrated the researcher’s unconventional approach to dealing with “real-world constraints” (JK-I2). While people can learn about how to deal with contextual factors that influence their approaches to evaluation research design, “it is not as meaningful as actually seeing a real-world case” (JK-I2).

Kushma added that an enabling criterion for selection of the case was “it would lend itself well to group discussion in the teams” (JK-I2). Kushma’s discussion about her criteria for selection of the case illustrate that the affordance of the tools were an influence on which case was selected for use in the team activity; thus the criteria for case and tool selection were conjoined.

The characteristics of the case Improving Literacy in the Seattle School District (Electronic Hallway, 1999), Kushma explained, supported the use of the case in an individually oriented activity (JK-I2). Her notes state the “case describes the inception and
first year of a privately funded, nonprofit program aimed at improving the skills of elementary school readers by enlisting high school students to coach them” (JK-CM1). With both Electronic Hallway cases, Kushma designed the approach to using the cases and created the specific instructions for each case activity (JK-I2; JK-CM1). This allowed her to use professionally constructed cases in a way that met the specific learning needs for the case assignment as reflected in the object of the activity.

The case selected for the Interdisciplinary Disaster Theory and Research course was Hurricane Sandy, which was a real-time case. The case tools, which were referenced in the assignment description (JK-CM2), included a Public Broadcasting Service (PBS) documentary about Hurricane Sandy (Ambrosino, 2013) and an article and video from Huffington Post entitled “Hurricane Sandy Damage Amplified By Breakneck Development of Coast” (Rudolf, Hallman, Kirkham, Knafo, & Sledge, 2012). The central argument in the Huffington Post article was that “authorities in New York and New Jersey simply allowed heavy development of at-risk coastal areas to continue largely unabated in recent decades, even as the potential for a massive storm surge in the region became increasingly clear” (Rudolf et al., 2012, para. 6). The case materials provided students with common frame of reference as the starting point for their case-based exam.

As has been demonstrated, the objects of the learning activities influenced Kushma’s selection of cases and case tools. An enabling criterion for the selection of cases was their applicability for use in individual or team assignments; from an activity theory perspective, this reflects attention to the affordance of tools in relation to division of labour. A distinguishing characteristic of the cases Kushma used in Evaluation Research course was they did not pertain to DEM; rather, selection criteria were solely focused on the ability of
the cases to demonstrate situations relating to the “application of the concepts of evaluation research” (JK-I2). In contrast, the case in the *Interdisciplinary Disaster Theory and Research* course was a current disaster event. The characteristics of Kushma’s learning activities designs will now be described.

**Characteristics of Kushma’s case-based learning activity designs.** This section will present the findings from the cross-case analysis of Kushma’s three variations of the approach to the use of cases as simulations, which are a form of cases as problems to solve (Jonassen, 2011). Kushma’s case-based learning activities shared a common design. Students were given a case and an assignment to complete in relation to the case. The variations between the case designs reflected the specific nature of the tasks in the assignment and the division of labour. One of the case activities was team based, and the other two were individual. The characteristics of each of the three variations on Kushma’s approach to the use of cases as simulations will be described. The data sources for analysis of Kushma’s case-based activity designs included the transcripts from the two interviews, the course syllabi, and copies of case tools and case assignment instructions.

The first assignment in the *Evaluation Research* course was an online team activity that occurred over a three week period. The three-part structure of the activity was as follows (JK-I2; JK-CM1). For Part 1, students read the case study, and worked in pairs (division of labour) to answer 11 questions about the key dimensions of an evaluation research design as it pertained to the case (e.g., what is the research question, what theories would inform the research design, how to collect data). Pairs uploaded their responses to the questions. At the beginning of Part 2, Kushma commented on the submissions, noting, “As we might expect, a wide range of approaches to studying this problem were presented by all of you. We now
want to share and discuss those responses” (JK-CM1). Accordingly, Kushma created a discussion thread for each question and assigned pairs to moderate dialogue for a group of questions. Each pair was asked to first post their own responses to the questions, and then moderate discussion over the course of the week. At the end of the week each pair summarized and posted concluding remarks. Kushma’s posting at the beginning of week three reinforced the different approaches considered for studying the problem presented in the case. She shared the actual research design for the evaluation research study and empirical results from the case and for Part 3 posed questions to students regarding their reaction to the design and results. She concluded with a question about the policy implications of the findings from the research.

Kushma said that when she initially designed the Evaluation Research course her intention was both cases would be team assignments (JK-I2). As a result of her assessment of students’ experiences with the first case activity she was left with the concern that some “rode the coattails of their team members” (JK-I2) and hence “just weren’t getting it” (JK-I2). Kushma said her “needs as an instructor to assess learning took over” (JK-I2), so she changed the design of the second case activity in the course to an individual activity. Kushma posted the case and the assignment instructions, which included an assessment rubric (JK-CM1). The case scenario, as described by Kushma, indicated the program manager of the literacy reading program thought the program was having a positive impact, but wanted to have this confirmed through a formal evaluation of the program (JK-CM1). For the assignment, students took on the role of a prospective evaluator and had to “prepare a three-page memo to the program manager” (JK-CM1) outlining the purpose and value of evaluation research, the questions the research would answer, the proposed indicators for
success and approaches to measuring the indicators, the proposal for the design and conduct of the study, and potential problems that could be encountered and how they would be handled (JK-CM1). The assignment instructions outlined the specific information students needed to address relative to each of these five points (JK-CM1). Students submitted their memo to Kushma, and she provided them with individual feedback (JK-I2).

Kushma spoke about students’ starting points in the Evaluation Research course and how their experiences with cases supported their learning. She said,

I was really having some difficulty with a few of the students who’d never been exposed to evaluation research before … and it was not until they had the cases that the light bulbs started going on. So that was a direct demonstration of the usefulness of cases. (JK-I2)

Kushma suggested research is a “thinking process” (JK-I2); hence case activities were a better means for students to learn about the process of research than simply having students read a book about research methods (JK-I2).

The case-activity design Kushma used in the Interdisciplinary Disaster Theory and Research course was an individual assignment for a final open-book exam (JK-CM2). Kushma explained, during the course, students had “explored different disciplines that informed the theory and practice of emergency management” (JK-I2), and she was looking for them to apply what they had learned throughout the semester in their responses to the assignment (JK-I2). Students were given a one-page handout describing the assignment (JK-CM2). The handout detailed the rules (e.g., due date, length), provided links to the Hurricane Sandy case tools, and then described the task. The scenario in the task was that the National Science Foundation had sent out letters inviting preliminary proposals for research
grants related to Hurricane Sandy, with emphasis on interdisciplinary research about the response phase of the disaster. Kushma provided a link in her instructions to the National Science Foundation’s (n.d.) *Interdisciplinary Research in Hazards and Disasters* webpage, thus reinforcing the realistic nature of the assignment. The assignment instructions included the structure the proposal was to follow and the number of pages for each section. The assignment gave latitude for students to choose the problem they wanted to study, and then required students demonstrate how to study the problem from an interdisciplinary perspective.

Kushma’s particular approach to the use of cases in her teaching reflected her understanding of how cases as tool support students’ learning, as well as assessment of their learning. Her functional approach to the use of cases as simulations reflected the focus in the objects of her case activities of developing students’ *knowledge of* research, rather than *knowledge about* research. The next section will explain the cultural-historic influences on Kushma’s case-based learning designs in more detail.

**Cultural-historic influences on Kushma’s case-based learning activity designs.** In this section I detail the findings about the influences of the faculty member, the institution, the profession, and disciplines on the characteristics of Kushma’s case-based learning activity designs. Evidence of historical factors that appeared to influence the characteristics of Kushma’s case-based learning activity designs is also noted.

**Influences on the characteristics of objects.** The objects of Kushma’s case-based learning activities appeared to reflect the influence of the faculty member, institution, disciplines, and profession. Kushma’s framing of objects (i.e., development of knowledge of research) for her case-based learning activities reflected her teaching philosophy (i.e., need to
provide theoretical foundations as well as opportunity for practise). As she noted, her teaching philosophy was strongly influenced by the training in adult education methods and principles (e.g., Malcolm Knowles) she received during her period of employment with the Red Cross. The objects also reflected Kushma’s personal beliefs about how cases support learning of knowledge of research (i.e., application of knowledge supports internalization; cases enhance students’ demonstration of knowledge for assessment purposes).

The focus on development of students’ knowledge of research in doctoral-level classes reflected the broader motives of doctoral programs of study more generally, as well as needs of DEM as a field of study. The inclusion of a course on *Interdisciplinary Disaster Theory and Research* reflects the interdisciplinary nature of the DEM field at the current time. The focus of the research courses can also be interpreted as reflecting the institution’s view of ways of knowing needed in the DEM field. As Kushma led the development of the doctoral program, the orientation of the research courses may also reflect her beliefs about the types of knowledge and competencies needed by doctoral students in the DEM field.

The dual focus of the object of the team-based activity in the *Evaluation Research* course reflected Kushma’s attention to getting “double duty” (JK-I1) from case activities by including an emphasis on collaborative response to the assignment. She identified collaboration as being a requisite competency in professional emergency management practice.

**Influences on the characteristics of tools.** Kushma’s preference for using professionally constructed cases for learning activities was reflected in the cases and tools she selected. She indicated that while she was interested in learning to design these types of cases, she had not yet had the opportunity to learn how to do this. Nonetheless, she did
design the Hurricane Sandy case in the *Interdisciplinary Theory and Research* course using existing materials. The focus of the case material in this course centred on the interrelationship between historical land-use planning decisions and the consequences in the aftermath and response to Hurricane Sandy; this reflects an implicit focus on mitigation as a critical dimension of emergency management activity. I noted a lack of use of disciplinary-specific literature in the *Evaluation Research* course case activities. This may reflect that, as of yet, there are no DEM-specific case libraries of professionally produced cases. Finally, the influence of the institution was reflected in the context for all of Kushma’s cases, which was limited to the US.

**Influences on the characteristics of activity designs.** The activity structures reflected Kushma’s teaching philosophy (i.e., provide theoretical foundations as well as space for practise) as well as her understanding of how cases support learning (i.e., intra- and inter-psychological dimensions of case activities). While the evaluation research case tools were professionally produced by Electronic Hallway, University of Washington (n.d.), Kushma noted they offered limited pedagogical guidance, and hence she created the structure for the case activities to meet the specific learning needs of students in relation to course learning outcomes. The division of labour (i.e., individual versus team) in the activities was influenced by whether the aim of the activities was knowledge development or assessment, as well as by her perceptions of students learning needs relative to the content. Kushma developed her case-based learning activity designs for teaching in an online environment, because all of the DEM DSc programs at JSU are offered online.

**Uniqueness of Kushma’s case relative to the others in this study.** Kushma was the only study participant who had extensive DEM experience gained through working in the
not-for-profit sector. She was only one of two faculty members in which the DEM program was situated in its own department; the other faculty member was Jensen. While NDSU and Jensen framed DEM as its own discipline, JSU and Kushma framed DEM as an interdisciplinary field of study. These differences in their perspectives were reflected in the characteristics of their case-based learning-activity designs.

There were three unique attributes associated with Kushma’s use of cases that contributed to knowledge about how faculty members use cases in their teaching in DEM programs. The first was Kushma was the only faculty member to use professionally developed cases from an established case library; this reflected her personal preference for the use of this type of case material. The second was Kushma was the only faculty member whose teaching was solely online; this was a reflection of the delivery model at JSU. The third was Kushma’s motive for the division of labour and structure of activity in one of her case-based activities was it emulated and developed the team-based competencies required in professional DEM practice. While others in the study also did this (i.e., Shaw), Kushma was the only one to integrate this kind of motive into the design of a learning activity in a research methods course for the express purpose of developing professional practice competencies. Her practice also contributes to knowledge about the motives for hybrid case designs.

**Case Report #3: Professor David Etkin**

Etkin is an Associate Professor of Disaster Management in the School of Administrative Studies at York University. He joined York in 2005 after a lengthy career in the federal public service with Environment Canada; his interest in and knowledge about hazards and disasters was influenced by his professional experience. Etkin does not claim
any one area of expertise within the DEM field; rather, he describes himself as a generalist with an interest in many topics (D. Etkin, personal communication, June 6, 2012).

Etkin’s case report presents the findings from the analysis of data from four sources: (a) interview transcripts, (b) printed biographical information, (c) DEM program description from the York university website, and (d) copies of Etkin’s course syllabi and course materials. Materials received through personal communication with Etkin are cited in this case report using the participant codes in Table 5, whereas materials available to the public are directly cited.

Table 5

<table>
<thead>
<tr>
<th>Code</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>DE-I1</td>
<td>Transcripts from 1st interview with Etkin conducted on June 6, 2012.</td>
</tr>
<tr>
<td>DE-I2</td>
<td>Transcripts from 2nd interview with Etkin conducted on April 2, 2013.</td>
</tr>
<tr>
<td>DE-CM1</td>
<td>Course materials AK/ADMS 3702: PPT presentation and term paper case-based assignment description contained in email received July 3, 2012.</td>
</tr>
<tr>
<td>DE-CM2</td>
<td>Course materials DEMS 5020/ENVS 640: (a) Grassy Narrows Lecture Notes, (b) Melt Down at Three Mile Island handout to accompany video, documents received by email July 3, 2012.</td>
</tr>
<tr>
<td>DE-CV</td>
<td>Etkin’s curriculum vitae, document received by email July 3, 2012.</td>
</tr>
</tbody>
</table>

Note. AK/ADMS = University code for courses in the School of Administrative Studies; ENVS = University code for courses in the Environmental Science program; PPT = Microsoft PowerPoint slideshow.

**Faculty member profile.** This section of the case report will describe Etkin’s (a) disciplinary background, (b) professional experience, and (c) teaching experience and
philosophy. From a disciplinary perspective, Etkin can be described as a physicist turned social scientist. The account of this transition is as follows. Etkin’s earned a BSc in Physics in 1972, a Bachelor of Education in 1974, and an MS. in Physics in 1991 (DE-CV; DE-I1). After completing his undergraduate degrees he taught high school math and science for 2 years (DE-CV; DE-I1). In 1976, he went to work for Environment Canada, where he stayed for almost 30 years (DE-CV; DE-I1). His first position at Environment Canada was as weather forecaster; this led to his interest in extreme weather events and in turn natural disasters (DE-I1). Etkin credits Ian Burton, who was his director at Environment Canada, for enabling Etkin’s deeper understanding of the relationship between hazards and disasters (DE-I1). Among other things, Burton sent Etkin off to the annual Natural Hazards Workshop in Boulder, Colorado, thus providing Etkin with exposure to research about hazards and disasters (DE-I1). Etkin spoke about how this exposure to the perspectives of others led to a change in his thinking about the causes of disasters:

> Just by talking to people from other disciplines and by reading case studies of disasters, it dawned on me that the disaster really had very little to do with a physical event. It had a whole lot to do with how people make decisions in society that construct vulnerability. (DE-I1)

Etkin went on to describe how this intellectual transition changed what he looked at, and the disciplinary lens he started to look with and through:

> I can’t remember how many years it’s been since I solved an equation…. I moved away from doing analyses of hazards and climatologies … to looking at things like mitigation strategies and a variety of other social science related issues in terms of the field. (DE-I1)
In 1994, while still working at Environment Canada, Etkin was co-appointed as an Associate Faculty member at University of Toronto in the School of Graduate Studies where he conducted research on natural hazards and began teaching and supervising graduate students (DE-CV). In 2005, he became a contract teacher at York University, and then accepted a full-time appointment as Assistant Professor at this university in 2008, and became an Associate Professor in 2011 (DE-I1).

Etkin’s scholarly work reflects the shifts in his interests and disciplinary perspectives. While his earlier publications focused on natural hazard assessment and climate change concerns, in the late 1990s his publications began to integrate analysis of the human dimensions of hazards and disasters (DE-CV.). An example of an article that reflects his shift in thinking about the human dimensions of disasters is “The Importance of Measuring the Social Costs of Natural Disasters at a Time of Climate Change” (Dore & Etkin, 2000). He recently published the book Disaster Theory: An Interdisciplinary Approach to Concepts and Causes (Etkin, 2016). He has also been examining disaster ethics, which he suggests are of extreme importance but understudied to date (DE-I1; DE-I2). Additionally, Etkin was one of the initial founders of the Canadian Risk and Hazards Network, which was modelled after the Natural Hazards Workshop in Boulder (DE-CV).

Etkin started teaching in the emergency management field when he joined York University in 2005 (DE-I1). When asked to describe his teaching philosophy, Etkin stated he wants students to learn core foundational knowledge and to develop “their critical thinking skills so they can take that subject matter and deal with it in an appropriate and intelligent way” (DE-I1). While attending to these foundations, Etkin said he tries to strike a balance between “teaching students and teaching the subject” (DE-I1). Like others interviewed in this
study (e.g., Jensen), he said he also wants to give students a sense of how interesting the field of emergency management is (DE-I1). Thus, Etkin’s teaching philosophy reflects attention to both subject and object, as well as the outcomes of learning processes. The factors that influenced Etkin’s approach to teaching included his experience as a high school teacher; student feedback, both good and bad; as well as his education degree, although he noted this was a distant experience (DE-I1).

**Views of DEM professional activity.** Etkin’s views of the profession, as presented here, are based on my analysis of the transcripts from the first interview (DE-I1). Etkin said it was difficult to answer the question about the primary object of emergency management activity, because the field is so diverse. In order to answer the question he said, one would have to first identify the different sectors in which professionals work. For example, Etkin said, “If you worked for the International Red Cross, you’d be doing very different things than somebody working … for the Bank of Montreal” (DE-I1).

When asked to describe the characteristics of how experts in the field think, Etkin questioned whether this was about how experts are thinking, or should think, as he believed these were different issues. Given the aims of this study, the interview focused on how professionals should think. Etkin suggested “multiple levels of thinking” (DE-I1) are needed. The first dimension, he suggested, was operational thinking, which focuses on how to approach routine and standard functions (e.g., response activities). The second dimension, he said, was strategic thinking, which is the kind of thinking required to engage in policy work. These different kinds of thinking, Etkin suggested, reflect the different roles that professionals may be in. Etkin noted the greatest challenge is with the fact that current
approaches to emergency management do nothing to fundamentally change the nature of risk in society. As Etkin explained,

We’re creating a society, which on multiple levels is so fragile to shock that when it happens, the shocks are just enormous. So there’s this set of forces in society, which are creating vulnerability and creating fragility, and there’s a set of forces in society where we try and cope with it…. All the stuff we’re doing to try and reduce risk is being overtaken by the global juggernaut that creates it. (DE-I1).

The best emergency managers can often do, he suggested, is to mitigate the effects of hazards on society. In doing this, Etkin said, there need to be “much greater degrees of networking and connectedness within society overall … but also the importance of thinking at larger than local scales” (DE-I1). While this comment speaks to the need for emergency managers to be able to understand the larger systems of which their specific function or activity is a part, it also addresses how emergency managers need to work, which is to expand their networks and to coordinate and collaborate with others.

Etkin suggested the ethics that should guide emergency management practice have been “poorly articulated within the profession” (DE-I1) and are generally missing from the academic literature. Etkin explained, “I think one of the problems with the practice of our profession is that we focus on it as if it’s about things, not about people” (DE-I1). This leads to decision-making based on cost-benefit analysis, rather than duties and rights (DE-I1).

Another concern he expressed was the lack of discussion about “good … [and] evil” (DE-I1). Etkin described the “things that enhance and save people’s lives” (DE-I1) as good, while things that are evil are “life-destroying” (DE-I1). He acknowledged not all emergency management decisions need to take into account these perspectives, but argued that leaving
them completely out of the discussion was problematic. The topic of ethics as it pertains to the profession of emergency management has become one of the areas of focus in Etkin’s research and scholarship.

**University profile.** Etkin explained the impetus for the launch of the emergency management programs at York University came from Emergency Management Ontario, because of their concern practitioners in the emergency management field were “undertrained and undereducated” (DE-I2). A dean at York University at the time responded to this call to action and championed the launch of programs (DE-I2). A certificate in DEM was launched in 2005, followed by a master’s degree in 2007, and a bachelor’s degree in 2010 (DE-I1). These graduate programs are situated in the Faculty of Graduate Studies and undergraduate programs are in the Faculty of Liberal Arts and Professional Studies (DE-I1; York University, n.d.-a, n.d.-b).

Etkin said there are no prescribed learning outcomes for the master’s program at York University; rather, the curriculum gives students a lot of flexibility, as there are only two required emergency management courses (DE-I1). The York University (n.d.-b) website indicated students must also take one research course, as well as specified number of electives from within or across four different thematic areas: public safety and security, business continuity management, risks and social vulnerability, and other (e.g., terrorism, critical infrastructure). All of the courses offered in these streams are cross-listed with other departments (e.g., environmental science, sociology).

Etkin said the disciplinary orientation of DEM programming at York University was hard to describe, because the courses reflect the different disciplinary backgrounds of the faculty members, which include economics and planning; hydrology; human resources,
leadership, and organization theory; sociology; and natural hazards (DE-I1); this suggests a multidisciplinary orientation to the program. However, in a promotional video on the program webpage, Etkin also stated that disaster and emergency management is by its nature an interdisciplinary field of study (York University, n.d.-c).

The master’s program is offered on a full- as well as part-time basis, and attracts students who recently completed their undergraduate degree as well as professionals who are already employed in the emergency management field (DE-I1). While Etkin said the master’s program has an academic orientation, he noted the field of DEM is fundamentally about “contributing to the greater social good” (DE-I1), hence the program has a practical aim (York University, n.d.-c). In this regard, Etkin said the program provides students with the “the tools they need to do the learning they need, the practical learning, to be good professionals” (DE-I1). However, there are limits to what the program can cover.

It’s just not possible to meet the expectation that they’re [students] going to go out and be ready to enter a profession and function at a professional level, especially when they virtually all come in without a background in the field. (DE-I1)

In response to student feedback for a more practical orientation, an internship course was added to the curriculum and a focus was placed on bringing professionals into classes to speak (DE-I1).

**Etkin’s case-based learning activities.** Etkin’s reasoning for why he uses cases in his teaching was based on his assessment of students’ zone of proximal development (Vygotsky, 1978) relative to the object and on his knowledge about how cases, as tools, mediate learning. Etkin explained, “If they’re [students are] 45 years old and have been in the field, you can talk about theory, and they make the connections. You don’t even need to do
the case studies for them” (DE-I1). However, when students lack experience, theory is “just words … it doesn’t have a real meaning for them necessarily until you bring in examples of it happening, and then its much more effective learning for them. It sticks a lot better” (DE-I1). Etkin said when you provide students with a case example and “show what it led to … then they [students] really understand it at a much deeper level” (DE-I1). They see how it actually applies in a particular situation, and they’re more likely to be able to use it in the future” (DE-I1). Etkin spoke about the experiential dimension of cases, asserting that cases bring theory “to life” (DE-I1) for students in a way that “hook[s] the affective side of learning instead of theory, which hooks the cognitive side” (DE-I1). He noted one of the effects of students’ emotional engagement with academic material was it sparked their passion for the subject matter (DE-I1). From an activity theory perspective, Etkin’s reasoning for why he uses cases in his teaching reflects his understanding of the learning needs of students, as subjects, in relation to an object, and how cases, as tools, mediate students’ learning. Etkin said it would be very hard for him to teach in the DEM field without the use of case examples (DE-I1).

Etkin normally teaches an undergraduate course entitled Comprehensive Emergency Management: Integrating Critical Knowledge with Practice (DE-CS1) and a graduate course on disaster theory entitled Disasters – Concepts and Causes (DE-CS2); the latter course being one of the two required courses in the master’s program (DE-I1). Following the first interview Etkin provided four examples of cases he has used in teaching his undergraduate class, and 14 examples of cases used in teaching his graduate class. He said that while not all of the graduate case examples were used each year, he always used two cases: Hurricane Katrina and the Three Mile Island nuclear incident. Through analysis of the transcripts from
two interviews with Etkin, as well as analysis of Etkin’s case tools and course syllabi (DE-CS1; DE-CS2), I identified six different approaches to his use of cases in his teaching. I then analyzed representative examples of each of these six different approaches in more detail. The six examples were selected to illustrate the diversity of types of cases and case tools Etkin used in his teaching. This section will present the cross-case analysis of Etkin’s six approaches to the use of cases.

**Characteristics of Etkin’s objects.** The phenomenon that was the object of study in Etkin’s six examples of the use of case-based learning fell into five categories. The objects of the activities in each of these categories will be described. Two of the six examples of Etkin’s approach to the use of cases focused on developing students’ knowledge about disasters and their impacts, including human and organizational response; both were graduate case activities (DE-I2; DE-CS2). The object of the Another Day in Paradise (Bergman, 2009) case was to develop students’ knowledge about the human impact of disasters, while the object of the Hurricane Katrina paramedic story was the need to develop students’ knowledge about disaster impacts as well as human and organizational response (DE-I1; DE-CS2). While Etkin explained both cases engaged students affectively, he stated that was the sole purpose of the Another Day in Paradise case (Bergman, 2009; DE-I1; DE-I2).

The second and third categories of Etkin’s objects both focused on disaster theory. The difference between the objects was that one focused on developing students’ knowledge about theory, while the other focused on developing knowledge of disaster theory. The object of the Grassy Narrows case was to develop students’ knowledge about the historical construction of vulnerability (DE-I2). With this case, Etkin wanted students to see and feel “the effect of prejudice and racism and how that plays out in society” (DE-I2). The object of
the Afghanistan and Haiti floods case activity was the need to develop students’ *knowledge of* the strengths and weaknesses of different theoretical models that support a deeper understanding of hazards and disasters (DE-I2). Etkin explained he wanted students to “get away from the notion of a [theoretical] model as reality, but just as a tool … and in different situations one … or another will be better” (DE-I2). Both of these cases were used in Etkin’s graduate disaster theory course (DE-CS2).

The fourth category of objects was focused on developing students’ *knowledge about* theory and practice. The need addressed in the Three Mile Island case, which was a graduate activity, was to develop students’ *knowledge about* theories and practice pertaining to living with and managing hazards and disasters (DE-I2; DE-CS2). The case served to illustrate normal accident theory, as well as other topics previously covered in the course including risk communication, decision making under uncertainty, and the need for cross-community coordination (DE-I2).

The object of study in the fifth category was to develop and assess students’ *knowledge about* the conceptual foundations (i.e., mitigation, preparedness, response, and recovery) of emergency management practice; this was an undergraduate case activity (DE-I2; DE-CS1). A characteristic of this particular object was that it had a dual objective of developing students’ knowledge as well as assessing the knowledge they developed through the activity.

In the examples profiled here, five of the six objects Etkin’s case activities focused on development of students’ *knowledge about* (a) disasters and their impacts, (b) disaster theory, (c) disaster theory and emergency management practice, and (d) emergency management practice, while one of activities focused on development of students’ *knowledge of* theory.
The phenomena in three of the six case activities had a postdisaster and response focus, while the other three focused on pre- and post-disaster contexts and issues. Cases and case tools were the means for Etkin to bring the phenomena associated with each object “to life” (DE-I1) for the students. Etkin’s reasoning for the use of cases in his teaching as well as the characteristics of his cases and case tools will be explained in the next section.

**Characteristics of Etkin’s cases and case tools.** A case, Etkin said, can be a disaster, such as Hurricane Katrina, or an example from practice, such as “the application of a policy which did or didn’t work out” (DE-I1). When asked about whether his case selection begins with the case (e.g., disaster, policy example), or the case tool (e.g., article, video), Etkin paused to reflect and then said the article or tool was “more important than the case” (DE-I2). Good case materials, Etkin explained, “really bring out aspects that are discussion worthy or memory worthy,… [and they do this] in an interesting way” (DE-I2). Etkin recalled reading something by a psychologist who said, “You’ll often forget what people say to you, but you’ll never forget how they make you feel” (DE-I2). The ability of a case to affectively engage students, according to Etkin, was one means of making it “memory worthy” (DE-I2). Thus, Etkin’s criteria for selection of cases and case tools were conjoined. The necessary criteria reflected in Etkin’s selection of cases and case tools were they needed to link to the course and be a good example of the topic. An enabling criterion for tool selection was that the case materials needed to affectively engaged students with a case. When the object of a case activity focused on disaster theory, other tools were selected to develop students’ disciplinary ways of seeing and understanding the case (or cases). The cases and case tools selected by Etkin will now be described.
The undergraduate case activity consisted of two interrelated assignments that required students select a disaster of their choice for in-depth study (DE-I2). Etkin said students were free to choose any disaster that was of interest to them, it did not necessarily need to involve physical damage, and it could include something that was “cultural” (DE-I2). Students selected the case tools; there was no specification as to the types of case materials (e.g., academic vs. grey literature) that students needed to use.

The syllabus for the graduate disaster theory course stated the course would take “an interdisciplinary and mainly social science approach with a global perspective … but with some emphasis on Canadian content” (DE-CS2). Accordingly, the examples of cases Etkin used in this course were of phenomena associated with a range of hazard types in different country contexts (DE-CM2). In addition to the case needing to link to the course and provide a relevant example of the object of study, an enabling criterion that influenced his selection of four of the five graduate cases was their ability to affectively engage students with the case. The specific characteristics of the five graduate cases and case tools were as follows.

Two of the five graduate case tools were narrative accounts. The first narrative was a handout from the book *Another Day in Paradise: International Humanitarian Workers Tell Their Stories* (Bergman, 2009). The handout included the forward by le Carré (2009) and the first chapter by Levine (2009), which provided a narrative account of Levine’s experience as an aid worker in Sudan in 1985. Etkin said,

[This case] made an impact on me when I read it…. I could imagine being there in that place and feeling and doing that [work]. And that’s all I wanted it to do, to try and bring them to a different place. (DE-I2)
Thus, the tool was used because it provided a vicarious form of experience for students. The tool for the second narrative case was handout of a weblog posted by two paramedics who were in New Orleans for a conference at the time Hurricane Katrina hit (Bradshaw & Slonsky, 2005). They recounted their personal experiences following the hurricane, describing the tensions and competing behaviours between people trying to survive and officials carrying out their duties (Bradshaw & Slonsky, 2005; DE-I2). Etkin said in addition to highlighting how people in a disaster come together to act in cooperative versus competitive ways, the case “brilliantly” (DE-I2) exemplified moral and ethical dimensions of emergency management practice. He said a particular affordance of the case was it illustrated the consequences of how bureaucratic systems can lose sight of “individuals as moral beings who have rights and to whom we owe a moral duty” (DE-I2). This case reflected Etkin’s view that there is need to examine the ethical dimensions of emergency management practice.

The tools for two of the other graduate cases were compilations of materials that Etkin had put together about the cases. The handout (DE-CM2) he gave to students for use with the Three Mile Island case activity indicated the case is included in Charles Perrow’s (2011) *Normal Accidents: Living with High Risk Technologies*, which examines whether or not events such events can be prevented. A United States Nuclear Regulatory Commission report about the event was listed as a reference on the handout (United States Nuclear Regulatory Commission, n.d.). The primary case tool was a 1999 PBS documentary video (Gazit, 1999) about the nuclear event (DE-I2). The case was used in the latter half of the course, and while it served to illustrate normal accident theory, it also addressed some other topics covered in the course, including risk communication, decision making under
conditions of uncertainty, and the need for collaboration between jurisdictions (DE-I2). The
necessary case selection criteria reflected the need to link to the course and provide a relevant
element of the topic. Etkin said the video “brings the case to life” (DE-I2) in a way that
captures the experience, feelings, and reactions of those impacted by the nuclear event. Thus,
an enabling criterion was the ability of the case tool to affectively engage students with the
case. The other case that was based on a compilation of materials was the Grassy Narrows
case. Etkin gave three reasons for why he selected this case:

I’m morally outraged by what happened to the people at Grassy Narrows. I think I’ve
picked it for that reason. But, also, it illustrates understanding vulnerability within a
historical context … this one’s Canadian. So I like it for that reason. (DE-I2)

Thus, case selection criteria included the need to link to the course and provide a relevant
element of the topic, as well as the enabling criterion of the need to affectively engage
students with the case. The selection of a Canadian case was in keeping with the stated
objective of including Canadian content in the course.

The final case activity focused on developing students’ knowledge of disaster theory.
Etkin selected two cases for this activity; the case tools were newspaper accounts of the 2002
Afghanistan Earthquake and the 2004 Haiti floods (DE-CM2). Students examined these cases
using two different theoretical models. The first was the “CARE\(^5\) model” (DE-I2) and the
second was the “pressure and release model (PAR)” (DE-I2). Etkin said sometimes he also
used an “ecological model” (DE-I2). Etkin adapted the PAR model to focus on “chains of
cause and effect” (DE-I2), rather than “dynamic pressures” (DE-I2), which he says students

\(^5\) The model used by the organization called CARE International, “originally known as Cooperative
for Assistance and Relief Everywhere” (CARE International, n.d., para. 2).
have difficulty understanding. Additionally, he expanded the hazards dimension of the model to look at the “progression of hazard” (DE-I2), which complements the PAR model’s focus on progression of vulnerability. The criteria for case and tool selection included the need to link to the course and to provide a relevant example of a disaster event and its impacts and causes. Given the focus on theory, Etkin also had a need for tools to support students’ development of different disciplinary perspectives for understanding the causes of disasters.

In summary, while all of Etkin’s cases needed to link to a course and topic, case selection was influenced by the availability of case tools. Good case tools were ones that helped student to link the general with the specific in a way that was memory worthy. While the phenomena associated with each case varied, the disaster theory course had an intentional focus on looking at disaster concepts and causes across multiple contexts and hazard types while the undergraduate case activity gave students the freedom to choose from any type of disaster and context. The characteristics of the case tools were a factor that influenced the case activity designs.

**Characteristics of Etkin’s case-based learning activity designs.** When asked about documentation that described the structure of his case activities, Etkin said his approaches were not documented; rather his approach was to “just sort of do it” (DE-I1). This section will begin with a description of the structure of Etkin’s six different approaches to the use of case-based learning in his teaching and conclude by presenting the findings from analysis of the similarities and differences between these different approaches.

Etkin’s simplest case activity design was the use of a reading, “just for emotional impact” (DE-I1). This was the approach used in the *Another Day in Paradise* (Bergman, 2009) case, where Etkin gave students an excerpt from the book to read. “I don’t really take
any lessons out of it….. ,” Etkin said, “All I wanted it to do, [was] to try and bring them to a
different place if they haven’t been there” (DE-I2). While Etkin suggested that there was not
a specific lesson for students to take away from the course, his comments suggest the object
of the activity was to develop students’ *knowledge about* disasters and their human impacts.
Students’ lack of international field experience appeared to be a motive for this activity.

The Hurricane Katrina paramedic case activity was an example of a different
approach for developing students’ *knowledge about* disaster and their impacts. He described
his approach to the use of this case: “I don’t talk about it. I just ask them [the students] to talk
about it. They are outraged. You should see the reactions they have … I don’t have to say
anything” (DE-I2). The lack of mediation by Etkin in students’ discussion about the case and
the design of activity were influenced by the affordances of the particular case tool.

Etkin explained that whenever he talks about theory, he illustrates it with practical
examples (DE-I1). Many of the case examples he provided were used for this purpose; the
Grassy Narrows case was an example of this approach to developing students’ *knowledge
about* disaster theory. For this case activity, Etkin gave a *lecture* about the case and then
engaged students in *discussion* (DE-I2). This particular case was designed to engage students
both affectively as well as cognitively. As Etkin noted, “I want students to feel moral
outrage, but also to look at vulnerability within a larger historical context and [see] how it
develops culturally” (DE-I2). Etkin used a different approach to developing students’
*knowledge of* disaster theories. In this in-class activity, students *read* the newspaper accounts
of the Afghanistan earthquake and Haiti flood cases, and then students spent 30 minutes
*analyzing* the disasters using two or three disaster models, with the goal of *identifying* the
strengths and weaknesses of each model (DE-I2). These examples of two different
approaches to developing students’ knowledge about and of disaster theories demonstrate how objects direct activity.

The Three Mile Island case, which is used in the latter half of the graduate course, focused on developing students’ knowledge about both theory and practice. This activity required students watch a video and make note of incidents that relate to the following themes: risk communication, risk perception, preparedness plans, human and technological errors, controllability of complex systems (normal accident theory vs. high-reliability theory), human response, and decision making under conditions of uncertainty (DE-I2; DE-CM2). Etkin provided students a handout with some details about each of the themes (DE-I2). Following the video, Etkin led students in a discussion about their analyses of the video; in some instances he has asked a student to lead the discussion about a particular topic (DE-I2). The purpose of the case activity, he said, was to have students see how the themes related to material previously covered in the course (DE-I2). In this regard, the design was for an integrative activity that addresses both theory as well as different dimensions of emergency management practice.

Etkin’s final approach to the use of cases in his teaching was a case in an assignment activity. In his undergraduate course there were two interrelated case assignments; one was a Microsoft PowerPoint (PPT) presentation and the other was a term paper (DE-I1). The reasoning for the use cases in these activities was to support development of students’ deeper understanding of the conceptual foundations of emergency management practice. The assignments were similar in structure. Students selected a disaster of their choice to study. In the PPT presentation, students summarized how the pillars of mitigation, preparedness, response, and recovery pertained to the selected disaster. Rules for the assignment included
the requirements that students provide talking points in the notes section of the PPT, the PPT should be 25–30 slides in length, and that references needed to be included. In the term paper, which was to be 12–15 pages in length, students presented their analyses of the same disaster from the perspective of each of the four pillars. Etkin said the paper was intended to provide a greater depth of analysis, while the PPT was a tool for presenting students’ initial analyses of the relationship of the pillars to the disaster. In this approach to the use of cases, students’ analyses of a specific disaster served as a means of connecting abstract concepts, such as mitigation, with the practice, or lack of practice related to mitigation in a given context.

The differences between the objects of the activities and the case tools were found to influence the characteristics of Etkin’s different approaches to the use of cases in his teaching. Etkin selected all of his cases for their instrumental value. In five of the six case activities Etkin provided one historical case example related to the knowledge that was the object of study. The object of these five case activities all focused on development of students’ knowledge about (a) disasters and their impacts, (b) disaster theory, and (c) emergency management practice, or some combination thereof. In contrast, the activity that focused on development of students’ knowledge of disaster theory and models had two cases examples, which allowed for comparison of how theory applied in different contexts; thus, the functional use of cases was both illustrative and comparative.

I found three different approaches to the division of labour in Etkin’s case-based learning activity designs. In the first approach, the case activities were intrapsychological tool-mediated activities, with no mediation by the instructor or peers. This approach was used in the Another Day in Paradise (Bergman, 2009) case and the undergraduate case
assignments. In the second approach, the division of labour for mediating students’ knowledge about the case included peer-to-peer interpsychological activity, with various levels of instructor facilitation; this design was used in the Three Mile Island case, Afghanistan and Haiti cases, and the Hurricane Katrina paramedic case. The final approach to division of labour, as used in the Grassy Narrows case, also included interpsychological activity, however mediation was by the instructor, rather than peers. Thus, a primary difference between the three types of approaches to the division of labour in Etkin’s case activities was the role of the instructor and role of students in relation to each other in the meaning making process. Etkin’s three different approaches to the division of labour in his case-based learning activity designs reflected his attention to trying to find a balance between teaching students versus an academic subject; this value was a stated goal in his teaching philosophy. This section has explained how Etkin uses case-based learning activities in his teaching, and the similarities and differences between his various approaches to the use of cases. The next section will explain the cultural-historic influences on Etkin’s case-based activity designs.

**Cultural-historic influences on Etkin’s case-based learning activity designs.** In this section I discuss the findings about the influences of the faculty member, the institution, the profession, and the discipline on the characteristics of Etkin’s case-based learning activity designs. Evidence of historical factors that appeared to influence the characteristics of Etkin’s learning activities is also noted.

**Influences on the characteristics of objects.** Etkin’s agency was reflected in the framing of the objects, which focused on the importance of the human dimension in understanding hazards and disasters. This perspective reflected the shifts in Etkin’s own
thinking about the causal attributes of disasters, which as influenced by his work with Ian Burton, as well as his participation in the Natural Hazards conference in Colorado. The characteristics of the objects also reflected Etkin’s views of DEM as an academic field of study, with an applied aim, rather than a professionally oriented program of study. This same perspective was reflected in York University’s description of the program. The applied aim was reflected in the objects of activities which focused on development of students’ knowledge about (a) different dimensions of professional practice; (b) ways of thinking that are needed, but not currently reflected, in the way professionals carry out their work; and (c) the ethical dimensions of practice. The influence of the profession was reflected in the objects of the activities and thus the phenomena that each case was an example of, rather than in development of professional competencies.

**Influences on the characteristics of tools.** Etkin’s knowledge about how students learn and how cases supported learning influenced the criteria for his selection of case tools (e.g., being memory worthy; affective dimensions of cases). The selection of cases in Etkin’s graduate class reflected his attention to the diversity of hazard types and complexity of phenomenon that professionals are expected to be able to deal with; this reflected his views about the diversity of functions and roles within the emergency management field. Furthermore, Etkin’s broad approach to the interpretation of what constitutes a disaster was reflected in the scope of the type of disaster cases that students could select for the undergraduate case activity. Additionally, Etkin noted the affordances of tools as well as the literature he had reviewed were an influence on which cases he selected. For example, three cases (Hurricane Katrina, Grassy Narrows, Three Mile Island) dealt with ethical dimensions of emergency management practice, which Etkin perceived to being a missing dimension in
both the profession and academic field of study. It was noted that attention was given to the selection of cases from the Canadian context; this reflects the influence of geographical location of York University.

The theories and models (e.g., vulnerability theory, normal accident theory) that Etkin selected for looking at the Afghanistan and Haiti, Grassy Narrows, and Three Mile Island cases reflected different disciplinary perspectives. Each of the theories looked at different dimensions of the causes of disasters; this deeper understanding of complex causality was the kind of thinking that Etkin said was needed by professionals working in the DEM field. Etkin’s influence on the characteristics of the knowledge frames was also seen in his refinement to the PAR model, which is part of the At Risk model, to include the progression of hazards; this perspective reflected his own critical analysis and fine-tuning of the model, with the refinements reflecting his disciplinary grounding in the physical sciences. The conceptual framework that students used for the undergraduate case assignment was the four pillars model; the history of this model, as previously noted, came from an attempt by the US Governors Association to develop standardization in terminology associated with emergency management practice.

**Influences on the characteristics of activity designs.** Etkin’s functional approach to the use of cases to illustrate abstract constructs and theory reflected his understanding of the learning needs of students, in relation to the object of study. In particular, Etkin noted students who lack experience with disasters or emergency management practice are not able to meaningfully understand theories or concepts without the use of case examples. While Etkin had a teaching degree, his explanations about how cases supported learning were grounded by reference to his own experiences rather than to his formal education. Etkin’s
case activities varied in their degree of prescription and structure, as well as the approach to division of labour in mediating students’ understanding of the relationship between the case and the constructs or theory that the case was an example of. Etkin used deductive as well as inductive approaches for making these linkages. Some activities required students to draw linkages between the case and the object, while in others this was mediated by Etkin or through class discussion.

**Uniqueness of Etkin’s case relative to the others in this study.** Etkin was one of two faculty members whose disciplinary background included a degree in the physical sciences; the other was Dr. Greg Shaw. I found three unique attributes of how Etkin used cases in his teaching, relative to the other participants in this study. The first set of attributes related to his criteria for case and case selection. Etkin had one of the most liberal definitions of what constituted a case in a DEM program of study (e.g., the Grassy Narrows case and the inclusion of cultural disasters in students’ selection of cases). Furthermore, he was the only participant who explicitly qualified that the characteristics of case tools were more important than the case itself in case selection. While the instrumental function of the case necessarily delimited case selection, Etkin’s case selection was strongly influenced by enabling criteria related to how the tool brought a case to life. He was the only participant who spoke about or placed emphasis on case selection based on the affective dimensions of case tools. In addition, in describing the characteristics of DEM professional activity, Etkin was the only participant to delve into detail about the ethics that should guide professional practice and the importance of this to the profession, and to explicitly distinguish between the way that professionals think and should think.
Case Report #4: Dr. Brenda Phillips

Dr. Brenda Phillips held an appointment as Professor in the Fire and Emergency Management Program at Oklahoma State University (OSU) until the summer of 2013 when she moved to Ohio University Chillicothe to take up a position as an Associate Dean. During her time at OSU, Phillips was also a Senior Researcher at the university’s Center for the Study of Disasters and Extreme Events. The interviews for this study were conducted on July 5, 2012, and March 18, 2013, while Phillips was still a faculty member at OSU. Phillips’s area of expertise is social vulnerability to disasters. In 2012, Phillips received the Dr. B. Wayne Blanchard Award for Academic Excellence in Emergency Management in Higher Education. An excerpt from one of the nomination letters stated, “Few individuals have contributed as much to building the discipline of emergency management as Dr. Phillips has” (NDSU, 2014, para. 7).

Phillips’s case report presents the findings from the analysis of data from four sources: (a) interview transcripts, (b) printed biographical information, (c) DEM program description from the OSU website, and (d) copies of Phillips’s course syllabi and course materials. Materials received through personal communication with Phillips are cited in this case report using the participant codes in Table 6, whereas materials available to the public are directly cited.
Table 6

*Participant Codes for Personal Communication Data Sources Cited within Phillips’s Case Report*

<table>
<thead>
<tr>
<th>Code</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP-I1</td>
<td>Transcripts from 1st interview with Phillips conducted on July 5, 2012.</td>
</tr>
<tr>
<td>BP-I2</td>
<td>Transcripts from 2nd interview with Phillips conducted on March 18, 2013.</td>
</tr>
<tr>
<td>BP-CS1</td>
<td>Course syllabus POLS 6203 <em>Comparative &amp; International Dimensions of Fire &amp; Emergency Management</em>, Spring Semester 2011, document received by email on July 5, 2012.</td>
</tr>
<tr>
<td>BP-CM1</td>
<td>Course materials POLS 6203: (a) PDF of PPT used to introduce the POLS 6203 course; (b) copies of two handouts used to support students’ analyses of the international cases using the <em>At Risk</em> model, documents received by email on July 5, 2012.</td>
</tr>
<tr>
<td>BP-CS2</td>
<td>Course syllabus POLS 5373-001 <em>Populations at Risk</em>, Fall 2011, document received by email September 18, 2013.</td>
</tr>
<tr>
<td>BP-CM2</td>
<td>Course materials POLS 5373-001: (a) PDF of PPT used with the Princeville, North Carolina and Grand Bayou, Louisiana mini-case example, document received by email July 5, 2012.</td>
</tr>
<tr>
<td>BP-CS4</td>
<td>Course syllabus POLS 3763 <em>Mitigation and Recovery</em>, Fall Semester 2011, document received by email July 5, 2012</td>
</tr>
<tr>
<td>BP-CM4</td>
<td>Course materials POLS 3763: (a) PDF of PPT used with the Oklahoma City bombing and plane crash mini case example, PPT co-created by Brenda Phillips and Njoki Mwarumba; and (b) PDF of PPT used with the Grand Bayou, Louisiana and Santa Cruz, California mini-case example, documents received by email on July 5, 2012</td>
</tr>
<tr>
<td>BP-CV</td>
<td>Curriculum Vitae, document received by email March 30, 2015.</td>
</tr>
</tbody>
</table>

*Note.* OSU = Oklahoma State University; POLS = University code for courses in the Political Science department; PDF = Portable Document Format; PPT = Microsoft PowerPoint presentation.

**Faculty member profile.** This section describes Phillips’s disciplinary background and its development over time, as well as her teaching experience and teaching philosophy.

were undertaken at Ohio State University, which at that time was home to the Disaster Research Center. Phillips’s dissertation was on “the women’s rights movements of the 1850s” (BP-I1), which she said prepared her for conducting research in the DEM field. The reasoning, she explained, was her dissertation was “embedded in the study of collective behaviour in social movements … [and within] sociology, that is where disasters are theoretically embedded” (BP-I2). Additionally, Phillips said she learned qualitative research methods from Quarantelli, one of the founders of the Disaster Research Center, which is where the first formal program of sociological research on human and organization experience with disasters began (BP-I2).

After graduating from OSU in 1985, Phillips went on to hold successive faculty appointments in sociology and women’s studies at three different institutions (Marysville College, Southern Methodist University, and Texas Woman’s University; Phillips, 2011). In 2001, Phillips left Texas Woman’s University and moved with her husband (Dr. David Neal) to JSU in Alabama. This move was motivated, Phillips said, by the desire to consolidate her focus, which included disaster research, sociology, and women’s studies, and to “just do disasters” (BP-I2), which had become her passion. In 2004, Phillips and Neal moved to OSU where another DEM position had opened up (BP-I2). Concurrent to her university appointments, Phillips consulted for groups such as the US Army Corps and the National Council on Disability, and volunteered with the Red Cross and local emergency management committees (BP-I1). These consulting and volunteer experiences gave Phillips exposure to the practice and needs of DEM as a profession.

Phillips explained how these career transitions changed her concept of self and talked about her motives at this stage of her career:
It’s hard sometimes to even think of myself as a sociologist anymore. I really think of myself as a professional in the discipline of emergency management. I’m a disaster researcher who drives the content and teaching of this field, and I am just determined, absolutely determined to make sure that when I retire it is considered a discipline of its own standing and that we have talented and trained professionals moving into these programs across the country. (BP-I1)

Phillips’s contributions to the development and advancement of emergency management as a field of study are evidenced in her long publication record of disaster research and her writing about the development of emergency management as its own discipline (Phillips, 2005). One of the fundamental roles she sees herself playing as both an author and a teacher is that of a being a knowledge translator who can help ensure social science research is understood and put to use (BP-I1; BP-I2). Examples of scholarly contributions that demonstrate her work to make research accessible to students and practitioners are the texts *Introduction to Emergency Management* (Phillips, Neal, & Webb, 2011), *Social Vulnerability to Disasters* (Thomas, Phillips, Lovekamp, & Fothergill, 2013), and *Disaster Recovery* (Phillips, 2015).

Phillips said that until 2001, when she went to JSU, she was primarily a researcher, who occasionally lectured as a guest in other people’s classes (BP-I1). Once at JSU, Phillips began carrying a full-time teaching load in the emergency management, and this continued during the term of her tenure at OSU (BP-I1). While many of the courses she has taught align with her areas of expertise, OSU assigns courses on a rotational basis; hence the courses Phillips teaches from year to year may vary (BP-I1).
Phillips said her studies in sociology, particularly feminist theory and feminist researchers were formative in the development of her teaching philosophy “because they tell you to engage the student, engage the learner, and to do so in a way that builds them up” (BP-I1). She listed the following core tenets of her teaching philosophy:

- “Get them to care” (BP-I1).
- “Get them to want to read something else” (BP-I1).
- “Don’t just learn for the sake of learning, but learn for the sake of applying and doing and changing and making sure that all this effort we’ve put in to create a really good, strong, sound science, to create good empirical research, does not go to waste” (BP-I1).

Additionally, she said, the need to engage students in the learning process was also tied to a course on critical thinking she took some 30 years ago in which she learned that “if you actively engage people, they’ll remember it better; they’ll understand it better” (BP-I1). The format of course delivery at OSU was also an influence on the development of Philips’s pedagogical practice, because the classes were delivered using live simulcast. These conditions led her to “read extensively in the literature on online education … [and about] the philosophy of creating a community of learners who work with each other” (BP-I1). Thus, the development of Phillips’s pedagogical knowledge and practice was influenced by (a) her disciplinary grounding (e.g., feminist theory) and interpretation of its application to the design of learning environments, (b) instruction about teaching critical thinking, and (c) her interest in learning about how to teach in online classes.

**Views of DEM professional activity.** Phillips described her beliefs about what emergency management professionals do, the characteristics of how experts in the field
think, and the values and ethics that should guide emergency management practice in the first and second interviews. The primary focus, or object, of professional emergency management activity, Phillips said, is to “save people’s lives” (BP-I1), and the corresponding motive that drives people to get involved in the field “is the chance to make a difference” (BP-I1). Given this focus, emergency management, Phillips said, is inherently a “people profession” (BP-I1) that requires the ability to work with people at individual, household, organizational, and community levels. The approach to working with others, Phillips suggested, requires professionals “identify and address the problems together” (BP-I1) with a community, rather than working independently “to solve their problems” (BP-I1). In this regard, Phillips said, an emergency management professional needs to be a “community builder … [and a] collaborator” (BP-I1). Hence, a primary characteristic of what emergency management professionals need to do is to work collaboratively with stakeholders to identify and address problems related to emergency management.

Phillips went on to explain the thinking skills needed by emergency management professionals. One of the skills that are needed, she said, is for emergency managers to be able to communicate science to people in a way that makes sense to them (BP-I1). For example, she said,

I want them to be able to be in a community meeting when someone says, “We need more sirens in this community,” and for them to be able to stand and say to that person in a thoughtful, sensitive way, “I hear what you’re saying, Tom, and I appreciate that. Let me tell you why we might want to think about some other options,” and to be able to present it to them rather than saying, “Well, according to
Sorensen 1997 there are three reasons why sirens are not effective warning systems.”

(BP-I1)

Thus, emergency managers need to be able to function as knowledge translators; this requires both thinking and communication skills. Additionally, Phillips explained, professionals need to be critical thinking actors who can assess the complexity of issues present in a given context while “making active choices” (BP-I2). For example, she said, if a tornado or hurricane was approaching a community, an emergency manager needs to think about how to push information out to the affected population in a way that reaches children who may be home alone, or people who “might not be hearing the sirens” (BP-I2) or getting text messages. Thus, from Phillips’s perspective, expert thinking in the emergency management is characterized by the use of empirical evidence to support collaborative decision making, as well as the ability, when required, to make timely decisions and take appropriate action based on analysis of the issues present in a given context.

While evidence-based practices are critical, other values that should inform emergency management practice are “compassion, commitment, dedication, understanding, sensitivity, patience, concern for every single person on this planet, no matter who they are” (BP-I2). While these are all important, being compassionate, Phillips said, is a primary value. She recounted a story to exemplify the importance of this value:

I think about this poor transgendered person that was in a shelter after Katrina down in College Station, Texas. And he went into the wrong restroom and was arrested and thrown into jail. I want someone that cares as much about my parakeet as they do about my grandmother because they’re all members of my family. (BP-I2)
The values Phillips listed and the examples provided are reflective of Phillips’s focus on issues of social vulnerability to disasters.

**University profile.** Emergency management programming at OSU began in 1996, when a Fire and Emergency Management (FEM) specialization was added to the MA in Political Science degree (Oklahoma State University [OSU], 2016b). In 1999, a stand-alone MSc in Fire and Emergency Management Administration was launched (OSU, 2016b). The MSc program initially had two tracks, one for fire management and one for emergency management (BP-I1). Curriculum changes in 2012 resulted in the elimination of tracks and the offering of a single curriculum (BP-I1). After joining OSU in 2004, Phillips and Neal developed a Minor in Emergency Management for the BA in Political Science program (BP-I1). Then, in 2009, a PhD program in Fire and Emergency Management Administration was launched (OSU, 2016b).

The admission criteria at OSU for the master’s program require an undergraduate degree in FEM, or significant experience in a fire or emergency management field (OSU, 2016a). In practice, Phillips said, there is some accommodation with these requirements (BP-I1). To address the differences in student starting points, those without experience have been supported to get an internship, while others have been required to take one or two undergraduate classes (BP-I1). All of these efforts were geared to levelling the playing field in the classroom (BP-I1). Phillips said the motives of students entering the program relate to their professional aspirations (BP-I1).

Our firefighters come in wanting to move up in the ranks, [and] become officers … [and] our emergency managers are looking for a job in the field. A few of them will go on to get a PhD, but most of them will be practitioners. (BP-I1)
These student motives are reflected in the learning outcomes (collective motives) for the program, and the approach to pedagogy in the program. As Phillips said, “I think when most of us teach it, we try to teach it with a real combination of theory and practice” (BP-I1).

Phillips and Neal have put effort into changing the profile of graduate students in the program. In the past, most of the students in the MSc program have been firefighters.

We have really increased the number of emergency management students, … and we’ve dramatically increased the number of women and minorities, and that’s been something I’ve really worked hard on … because I want to make sure that we diversify this field. I think that’s extremely important. (BP-I1)

Phillips explained the motive for diversifying the profile of students enrolling in the program. “People were on those roofs after Hurricane Katrina because we hadn’t diversified the field, and I really want that to happen” (BP-I1). Thus Phillips has concern for the profile of who in the next generation will be shaping the development of the discipline.

Phillips said the undergraduate and graduate FEM programs at OSU each have different disciplinary orientations. Two sociologists teach the undergraduate program, and hence “it’s heavily influenced by social science content, and it’s very disaster focused” (BP-I1). In contrast, the MSc program has a public administration core, which Phillips said was indirectly influenced by discussions at FEMA higher-education meetings going on at the time about the core competencies needed in the profession (BP-I1). While there are differences between the disciplinary orientation of the undergraduate and graduate degrees, they are all situated in the Department of Political Science.

With respect to Phillips’s own views of the disciplinary orientation of DEM postsecondary programming, she believes “emergency management is very much a
multidisciplinary field, with interdisciplinary potential” (BP-I1). She described what these different orientations look like in practice. “When I say multidisciplinary, it’s like we all teach from our silos. Interdisciplinary … is where we have a higher level of integration and we’re working across our disciplines to come towards some more robust understanding” (BP-I1). A drive behind the need for faculty to move towards an interdisciplinary approach, Phillips said, has been the students, in particular at the PhD level, who will be the next generation of researchers and academics, and the first generation whose doctoral degrees are in FEM rather than one of the traditional disciplines associated with this field (BP-I1). To meet graduate students’ educational needs, Phillips explained, faculty at OSU had to come together to figure out how each of their respective disciplines contributes to FEM as a field of study (BP-I1). The use of systems theory supported faculty members’ understanding of how their different disciplinary perspectives can be integrated (BP-I2). Shifting out of disciplinary silos, Phillips explained, has also been supported by team teaching activities, in which two faculty members had to come together to figure out how to integrate their respective disciplinary perspectives in the design and delivery of a course (BP-I1). Additionally, individual faculty have needed to “retool in some ways” (BP-I2) by reading and developing a knowledge base that extends outside of their disciplinary home. She described her own experience in retooling:

If you had told me … 20 years ago I’d be reading wildfire social science and being glued to the TV about [fires in] Colorado or California, I would have thought, “Nah, I’m just going to look at migrant families and see what happens to them in disasters and, you know, maybe just some more stuff on domestic violence. But … the field
has grown and evolved, and this is where our program is situated, so it’s where our faculty are having to go, too. (BP-I1)

While Phillips acknowledges the disciplinary orientation in her teaching is “heavily leaning” (BP-I1) towards her sociological orientation, she also works to bring an interdisciplinary perspective to her teaching by drawing from “a variety of fields in order to approach a topic holistically” (BP-I1). She further explained the process of faculty shifting from a multi- to interdisciplinary approach has driven by the development of the PhD in Fire and Emergency Management program at OSU, and this shift is still a work in progress. The process of change has involved activity at three levels: (a) between all faculty who teach in the program, (b) between two faculty who co-teach a course, and (c) individual study to extend one’s own understanding of a topic from other disciplinary perspectives.

**Phillips’s case-based learning activities.** A case, Phillips said, is “an event that caused community wide destruction” (BP-I1). She added cases “typically” focus on a particular phase of emergency management. Phillips described her reasoning for using cases in her teaching during the first interview (BP-I1). One reason for using cases, she said, was they connect with students at an experiential level:

I think our students relate to them well. You ask them about something in their own lives, and they’ll say, “Well, we were working this fire” or “We had this big flood come through,” so they are case-study oriented as well, so I think it fits pretty well with our student population. I think it’s kind of where their heads are at. And then you can say, “What are the issues that we find within the cases?” (BP-I1)

Phillips qualified, and said cases were “especially helpful if people don’t have a common ground or are new to the profession” (BP-I1) and cases can “a really level playing ground”
Another affordances of cases, Phillips said, is they “give you the chance to look at something in depth” (BP-I1). For example, she explained, cases let you “dig into” (BP-I1) issues pertaining to a specific situation, such as the root causes of disaster impacts following the earthquake in Haiti (BP-I1). From this perspective, the use of cases is a means of developing a disciplinary way of seeing experiences in the world. Thus, Phillips’s reasoning for the use of cases was based on (a) her beliefs about of students’ ways of knowing and understanding the world, (b) the effects of cases in creating “common ground” (BP-I1) between students, and (c) the ability to look at something in depth and “dig into” (BP-I1) the causes of events and the consequences of events.

I identified three different approaches to Phillips’s use of case-based activities. One type of case-activity structure was a case-based course, which used a comparative case study approach as the framework for the design for the course. Another approach was the use of a single in-depth case study within a course. A third type was the use of minicases to exemplify a topic being discussed in a class. The mini-cases examples provided by Phillips were from graduate- and undergraduate-level courses, whereas the case-based course and single in-depth case examples were from graduate-level classes. The next section will describe the characteristics of the objects, tools, and activities designs associated with Phillips’s three different approaches to the use of cases.

**Characteristics of the objects.** The objects of Phillips’s case activities were directed towards one or more types of learning needs; these were to develop students’ (a) knowledge about human experience with hazards and disasters, (b) knowledge about emergency management practice, (c) knowledge of or knowledge about theory and its implications for
practice, and (d) knowledge of and about disaster research and grey literature. While the objects of each of Phillips’s case activities had a different focus, they all had a practical aim. The objects of each of case-based learning activities will now be described.

The case-based course was entitled *Comparative and International Dimensions of Fire and Emergency Management* (BP-CS1). Students in the course were completing their master’s or doctoral degrees (BP-I2). The syllabus stated the course provided “comparative analysis of the organization, management and policies of fire and emergency response services in other countries” (BP-CS1). While a comparative case approach was used, the comparative aspect of the activity focused on students’ use of a theoretical framework for analyzing the root causes of three different disasters, rather than comparison of organization, management, and fire policies across contexts. In this regard, there was a contradiction between the stated aims of the course, and Phillips’s description of the object of the comparative case activities in the course. The following depiction of the object of the comparative case activity is based on descriptions of the case activity as contained in the course syllabus, and as shared by Phillips during the first and second interviews.

There were five interrelated learning needs that comprised the object of Phillips’s comparative case activity. The first need was for students to develop knowledge of theory that explains the relationship between contemporary and historical political, economic, and social factors that caused the destruction associated with different disaster events. Phillips recounted a conversation with her students that illustrated the gap between their “starting points” (BP-I1) and this dimension of the object of the case activity. She said to the students, I know you’re interested in the extrication of pancaked buildings, but what we’re going to talk about is the history of Haiti and how it got to be the point that hundreds
of thousands people died at that given moment in time, and it wasn’t because the buildings pancaked. It’s because of coups and slavery and political repression and decimation of the forests that drove people into the cities and urban migration patterns. (BP-I1)

While there is an intellectual dimension to understanding causation, Phillips said there is also a very practical aim. As she explained,

We have students, for example, that are firefighters, and their approach is “The structure’s on fire. What hose am I going to use? How am I going to organize my crew to do that?” We want to look at why it is that the fires start in the first place; why it is that you don’t have the resources to be able to use them, or talk about a wildfire context here. What about the debate over climate change, and how might that influence perceptions of need for resources or the deployment of personnel? (BP-I2)

Hence, a second learning need was for students to develop knowledge about the implications of root cause analysis of disasters for emergency management practice. An implication was the need to develop a strategic and systems thinking perspective about emergency management practice. In addition, within each case, different topics were selected for study; examples of topics included mass fatality management with the 2004 Indian Ocean tsunami case, shelter issues with 2010 Haiti earthquake case, and community preparedness with the 2009 Australian fires case (BP-CS1). The learning need associated with these topics was to develop students’ knowledge about what is empirically known about emergency management practice as exemplified by a particular event. The final dimension of the object of the comparative case activity was for students to examine the literature sources used in the case study. I found two associated learning needs. The first was to develop students’ knowledge
about the constraints on the availability of disaster management research and the implications for the DEM as a field of study, while the second need was to develop students’ knowledge of how to compare and critique research and grey literature (BP-I1). Each of these different learning needs was reflected in the design of the comparative case study.

The object of the single in-depth case study activity had a more limited focus. The Hurricane Katrina case study was used in a graduate-level Mitigation course (BP-CS3), and the object of the case study was to develop students’ knowledge about contemporary and historical factors that influence the success or failure of structural and nonstructural mitigation measures undertaken by a community in response to known hazards. Phillips spoke about the practical basis of this need:

They’re going to have lots of challenges trying to get mitigation projects approved in their communities when they go out and become practitioners. Or if they become researchers, they’re going to have to understand the process that occurs when you try to implement a mitigation measure. So they need to be politically aware, they need to be economically literate, they need to be able to understand the dynamics. And so I want them to go out there fully armed and ready, and knowing it’s going to be an uphill battle, but they have just got to join the fray. (BP-I2)

Hence, a second learning need for the Katrina case study was for students to develop knowledge about the implications of theory for practice, including knowledge about the processes and competencies required to get mitigations projects approved and implemented.

Phillips’s third approach to the application of cases in her teaching was the use of minicases. She provided three different examples of this approach: one was from a graduate course, while the other two were from undergraduate courses. The graduate case activity was
from Phillips’s *Populations at Risk* course (BP-CS2), which was a comparative case study of two different communities (Princeville and Grand Bayou). The object of the case activity was to develop students’ *knowledge about* the complexity of factors that influence an at-risk community’s experience with hazard events, and their approach to the response to and recovery from these events (BP-CM2; BP-I2). Consistent with the other graduate-case activities, this minicase study also explored causality and in doing so extended the temporal dimension of analysis of the events. In contrast to the graduate-case activities, which all focused on developing students’ *knowledge of or about* theory, undergraduate minicase activities in the *Mitigation and Recovery* course focused on practical concerns. The object of the Oklahoma bombing minicase was to develop students’ *knowledge about* the psychosocial impacts of disasters and crisis events and *knowledge about* how to support recovery from these events (BP-CM4; BP-I2). During the case activity, Phillips drew parallels between the bombing case and a local plane crash that occurred a decade before, in which coaches and members of the university’s basketball team along with a journalist were killed (BP-I2). One of Phillips’s motives with the bombing and plane crash cases was to have students not “be afraid of disasters” (BP-I2). She said she wanted students to understand there are things they can do to make themselves, their organizations, and their communities stronger, and there is a research basis for knowing this that also has a practical application (BP-I2). The object of the Grand Bayou, Santa Cruz, and Highlander minicase was to develop students’ *knowledge about* how different communities approach the organization of their disaster recovery efforts, and the value of and methodology associated with participatory recovery processes (BP-CM4). Factors that were found to influence Phillips’s case and tool selection will be described in the next section.
**Characteristics of Phillips’s cases and case tools.** Phillips’s case selection reflected both necessary and enabling criteria. The following two necessary criteria influenced her selection of all cases: (a) the need to link to the course and topic and (b) the need to have empirical evidence about the phenomena being studied. These criteria were conjoined in the selection of all cases with the exception of the Oklahoma City bombing case.

The enabling criterion reflected the influence of both the objects and subjects in Phillips’s case-based learning activities. The characteristics of the object, as complex phenomena, were reflected in Phillips’s decision to use comparative cases. All of the minicase activities used two cases, and the case-based course used three cases. Phillips spoke about her motives for the use of comparative cases in her discussion about one of the minicase activities. She explained she wanted students “to see that communities don’t always do things the same way, that there is variability, and what accounts for that variability” (BP-I2). The single in-depth study of the Katrina case was the exception that made the use of comparative cases an enabling rather than necessary criterion. However, the text used for the Katrina case, *Catastrophe in the Making: The Engineering of Katrina and the Disasters of Tomorrow* (Freudenburg, Gramling, Laska, & Erikson, 2009), included comparison with other locations with similar preexisting conditions that could lead a disaster event on the scale of Hurricane Katrina. Thus, while the use of comparative cases was an enabling criterion in case selection, the use of comparative cases was a common characteristic of all of Phillips’s case activities.

The other four enabling criteria reflected the influence of the students and instructor as subjects in a learning activity system. The criteria were the need (a) for a case to be current, (b) to have common student starting points, (c) to relate to students’ motives and
interests, and (d) to have personal experience with or connection to a case. Phillips spoke about the different motives pertaining to these criteria. A current case, Phillips said, needs “to be something that they [students] remember” (BP-I2). Phillips said when she used a “classic” (BP-I2) case that students were not familiar with, they found it harder to imagine the event, and got caught up in trying to understand details (e.g., number of deaths, magnitude of event), rather than focusing on topic that was the object of study (BP-I2). The Haiti, tsunami, and Katrina cases were all current in students’ memories. While the Australian fires and all of the minicases were temporally current, they were distant in terms of students’ knowledge or experience of the events. A reason for selecting current cases that students were not familiar with was that they created a “really level playing ground for everybody” (BP-12), as they all had “to learn the same material” (BP-I2). The selection of cases and topics that are personally relevant to students helps to engage them (BP-I2). Finally, all of the minicases and some of the larger events were ones that Phillips had personal experience with in some other capacity (e.g., researcher; BP-I2). She explained her personal relationship to a case allowed her to bring it to life for students faster because she has a “whole different relationship to the data” (BP-I2). The findings suggest that while the object and availability of associated empirical tools were necessary criteria that bounded the selection of cases for an activity, the enabling criteria refined case selection and contributed in a different way to students’ experience with a case. The characteristics of Phillips’s cases and case tools as well as her specific reasoning for their selection will now be described.

As previously described, the object of the case-based course activity was multimodal. Phillips needed to select cases, as well as topics within cases, for study. The three cases used in the course were the Indian Ocean tsunami, the Haiti earthquake, and the Australian Black
Saturday fires. While all three of the cases were relatively recent major international disasters, Phillips said the Australian Black Saturday fires case was not one that students were familiar with (BP-I2). She selected the case because it related to the interests of firefighters who were students in the program; this reflects an institutional influence on case selection. In selecting topics for study with each case, Phillips considered students’ professional backgrounds and interests as well as their level of study, noting that master’s students are interested in more practical material (e.g., debris management), while doctoral students need to be “focusing more on research and research literature” (BP-I2). An enabling factor in the selection of cases was Phillips’s various personal connections to each of the events selected.

The material tools for the international cases included books, research literature, technical reports, and websites. The text *At Risk: Natural Hazards, People’s Vulnerability and Disasters* (Wisner et al., 2004) was selected to provide students with a theoretical framework for examining the root causes of disasters; Phillips stated this text was the best book she could find at the time to meet this need (BP-I2). To augment the use of the text, Phillips created handouts for students to use in their analyses of the different components of the *At Risk* model. The book *The Indian Ocean Tsunami: The Global Response to a Natural Disaster* (Karan & Subbiah, 2010) was assigned as one of the readings for the Indian Ocean tsunami case. The book provided a multidisciplinary assessment of the environmental, social, and economic impacts of the tsunami. As Phillips found limited empirical literature available about the Haiti Earthquake (at the time that she was teaching the course), she assigned the popular book *Haiti After the Earthquake* by Farmer (2011), a physician who had been working in Haiti prior to the disaster (BP-I2). The use of media and broadcasting websites
gave students the ability to hear firsthand accounts of the people affected by the Australian fires; this tool helped to bring the case to life in a way that connected with students at an experiential level, thus making it “current” (BP-I2) for them. Phillips preselected some of the research articles related to the cases for each of the disaster events studied, while other articles were coselected by Phillips and the students (BP-CS1). Technical reports related to the cases served to supplement the available empirical material; examples of these documents included the Haiti reconstruction plan and previous Australian wildfire inquiry reports (BP-CS1). The selection of case tools reflected the following needs: (a) develop a disciplinary way of seeing (At-Risk text), (b) use empirical evidence as a way of knowing (tsunami book and research articles), (c) relate to students’ motives and interests (selection of articles and technical reports), and (d) bring the events to life (PBS website, Haiti book). Finding cases and topics that meet all of these criteria is a challenge (BP-I2).

The need for the selection of the Katrina case and case tool was to have empirical evidence about the object of study. As Phillips explained, sufficient time had past since Katrina for researchers to produce some good books about the event (BP-I2). One of those books, *Catastrophe in the Making: The Engineering of Katrina and the Disasters of Tomorrow* (Freudenburg et al., 2009), was a good fit for this course. Additionally, Phillips said, Katrina was the kind of event with a wide range of emergency management topics to study (BP-I2). Phillips liked the *Catastrophe in the Making* text because it gave students a theoretical lens to look through, as well as empirical data to look at (BP-I2). She said she likes to choose books as tools because they provide a rich description of the topic, and give students both depth and breadth with respect to knowledge about an academic subject (BP-I1). An affordance of the use of the text was that Phillips knew Shirley Laska, who was
one of the authors, and Phillips was able to bring Shirley into one of the classes using Adobe
Connect (Adobe Systems, 2012), an online communication tool (BP-I2).

The Oklahoma City bombing and plane crash cases met the need for cases to link to
the course and topic. While the events took place in Oklahoma, the case was not a “current”
case; however, several annual remembrance activities continue (i.e., a marathon and a 5- and
10-km run) as events in the city where the university is located (BP-I2). There were three
material tools used in this case. One was a chapter on “Social Psychological Recovery” in
Phillips’s (2009) book on Disaster Recovery. Another tool was the Hope Trunk, which is an
educational tool produced and distributed by the Oklahoma City National Memorial and
Museum (2016). Phillips talked about her reasoning for using the Hope Trunk as case tool
(BP-I2). “These kids barely remember the Oklahoma City bombing”, she said, adding, “I
remember running across campus like it was yesterday; for them, it’s history. So you have to
bring it alive in some way” (BP-I2). Having something as part of your history, she said, “is
completely different than experiencing it” (BP-I2). The Hope Trunk included some firsthand
objects from the bombing site; students could actually hold a piece of the building in their
hands (BP-I2). Phillips had participated in the memorial runs; she took her medals from the
runs into class, and talked about her experience in gathering with other runners at the
Memorial Fence after the run (BP-I2). Her personal stories and memorabilia served as
another way of bringing the case to life for students. Phillips codeveloped6 the PPT for use in
the class, which links the topics associated with the object to the Oklahoma bombing and
plane crash cases.

6 The PPT was codeveloped with a graduate student who went on to teach the course on her own the
following semester.
The minicases Phillips used in *Populations at Risk* course (Princeville and Grand Bayou cases) and in the *Mitigation and Recovery* course (Grand Bayou, Santa Cruz, and Highlander cases) met the need to link to the course and to have empirical evidence about the phenomenon that was the object of study. All of these minicases, with the exception of the Highlander case, were Phillips’s own cases of research (BP-I2). As Phillips explained, because she had done research in these communities and had intimate knowledge of the cases, she could “bring them to life faster” (BP-I2) for students. Additionally, she said students could access YouTube (2016) videos about people from Grand Bayou talking about their community, and this was another way of bringing the case to life for them (BP-I2). An outcome of using her own cases, Phillips said, was students had a “richer sense of things … they understand the environment better, they understand the economic challenges” (BP-I2).

While the object of Phillips’s case activities differed, the cases, as tools, were all “event[s] that caused community-wide destruction” (BP-I1). The disaster events selected as cases were situated in different geographic and cultural-historic contexts. The geographic context for the cases was determined by the location and scope of a hazard impact, and ranged from small communities (e.g., Princeville, Grand Bayou) to nation states (e.g., Haiti). The cultural-historic context for all cases except in the international course was the United States US. Phillips was sensitive to this bias, and noted it was an ethical concern for her. “I guess my biggest concern with case studies is that we end up being very US centric, and it worries me that students who leave courses end up with a biased view of what they might do out there” (BP-I2). Phillips noted the bias toward US cases was in part because of the dominance of US scholars in the disaster research literature. This concern feeds back into her motives and approach to development of the discipline itself. “I really want us to develop a
more robust and global body of knowledge, and that’s going to require making sure this next generation of researchers is ready to do that” (BP-I2). The need for a case to be current and the affordance of being able to bring Phillips’s own research cases to life faster may be other reasons for a bias in use of US cases.

**Characteristics of Phillips’s case-based learning activity designs.** The only case activities that had a formally prescribed structure were the international course and the Oklahoma bombing case. In these courses the tools were an influence on the design of the learning activities. For example, in the international course, the selection of the *At Risk* (Wisner et al., 2004) text and the Phillips’s assessment of students’ zone of proximal development (Vygotsky, 1978) relative to this theoretical tool gave the activity its main structure. While in the bombing case, the Hope trunk came with a prescribed set of activities for students to complete. In all other case activities (Katrina case and the other mini-cases), the primary case tools were the assigned readings and the PPT’s Phillips created for the class. While these other case activities involved no formal activity structure, they did include common rules and division of labour, which were prescribed in the course syllabi. These set the expectation for student participation and engagement in all course activities. Hence the mediating elements (i.e., tools, rules and division of labour) were the variables that distinguished the case-activity designs. Each of Phillips’s three different approaches to the use of cases will now be described in more detail.

The basic structure for the case-based *International* course was the student’s application of the *At Risk* (Wisner et al., 2004) framework to the analysis of each of the three international disasters selected for study (BP-I1). Additionally, students examined research related to specific emergency management topics as exemplified by each event. In the design
of the course, Phillips took into consideration the need to scaffold learning based on students’ zone of proximal development (Vygotsky, 1978). She explained students had difficulty understanding the At Risk framework because of its complexity. Her approach was “to break it [the framework] down into different parts, and then I try to build them [students] up to where they can actually do a presentation and paper on a country of their choice” (BP-I2). During the first 2 weeks Phillips explained the At Risk framework and discussed the course pedagogy (BP-CS1). The remainder of the course focused on the case studies, with 3 to 4 weeks allocated to each case (BP-CS1). Phillips provided handouts for different aspects of the At Risk framework to use in analyzing the case (BP-I2). During the first two case studies (Haiti earthquake, Australian fires) Phillips individually assigned students to further examine a particular topic in one of the cases (e.g., search and rescue, shelter construction) or an element from the At Risk framework (e.g., food security, urbanization; BP-CS1). Phillips said she initially matched assignment topics to students’ interests, and then stretched them into new areas (BP-I2). The final case study on the tsunami included a panel presentation on mass fatality management (BP-CS1). The student assignment for the tsunami case was to select a country impacted by the tsunami and then individually or in dyads apply the entire At Risk framework to their analyses of the event in that particular country context, and present their analyses to the class (BP-CS1). The division of labour within the course was based on Phillips’s teaching philosophy, which she made explicit in the PPT that was used to introduce the course (BP-CM1). With attribution to bell hooks’s Teaching to Transgress (hooks, 1993) and Paulo Friere’s Pedagogy of the Oppressed (Friere, 1994), she described her expectations, which included students needing to take “personal responsibility” (BP-CM1) for their own learning and to be “cocreators” (CP-CM1) of the knowledge produced during the course.
These expectations were reflected in the weighting of participation for the course (50%) and in the shared responsibility for selection of topics and readings as the course progressed (BP-CS1).

Phillips did not have a specific case activity design for the in-depth study of the Hurricane Katrina case. Rather, students gained in-depth knowledge about the case through their reading of the book *Catastrophe in the Making* (Freudenburg et al., 2009). The authors of the book make the point that the disaster following Hurricane Katrina in New Orleans was like the “proverbial canary in the coal mine” (Freudenburg et al., 2009); in other words, Katrina was a seminal event that illustrated the human engineering of disasters. Freudenburg et al. (2009) briefly described and compared two other locations in the US where the conditions and circumstances parallel those in New Orleans prior to Hurricane Katrina. While the focus of the Katrina case was on explaining how certain contextual factors influenced mitigation activities undertaken in New Orleans, the comparative dimension of this case was the need to understand how the claims made in the study could be generalized to other locations, rather than seen as unique experience. In this regard, the text on Katrina, as a research case, was a revelatory case (Yin, 2014). Phillips said students expressed “concern, frustration, and outrage” after coming to understand how the loss of life associated with Katrina was influenced by historical patterns of development (B. Phillips, personal communication, March 30, 2015). Their reaction prompted her to use an additional minicase from Berkely, California, to further illustrate the difficulties in enacting mitigation measures (B. Phillips, personal communication, March 30, 2015). She also had students examine real data related to the cost–benefit analysis of implementing mitigation measures (B. Phillips, personal communication, March 30, 2015).
The activity design for the Oklahoma bombing case differed from the design for the other two minicases. The use of the *Hope Trunk* in the bombing case is what gave the activity its structure. The students completed a prescribed set of activities that came with the Hope Trunk; this resulted in them being designated by the museum as a *School of Hope* (BP-I2). Phillips’s discussion about the case addressed topics such as:

- What happened to firefighters and how they reacted psychologically, what happened to the children and the kinds of programs that were put on and how they were evaluated, what kinds of long-term effects there might have been for the survivors, and then the fact that people still go out of their way to remember. (BP-I2)

During the case activity, Phillips drew parallels between the bombing case and a local plane crash that occurred a decade before, in which coaches, members of the university’s basketball team, and a journalist were killed (BP-I1). Phillips said about a week after the Oklahoma bombing case activity, there was a second plane crash at the university (BP-I2). She recounted how she adapted her teaching to respond to this incident:

- We went back and we talked about that lecture again. One of the students knew one of the coaches’ families and the coach, so it was a hard lecture to get through. So I literally pulled from what we did that day [previous class] to talk about how we get through this moment, and what we might do as a university community based on what we’ve done previously,… and so it actually became a teaching moment that I never saw coming at me. (BP-I2)

The adaptation of the course to address the second plane crash demonstrated Phillips’s attention to the need to scaffold learning based on Vygotsky’s (1978) zone of proximal development. As Phillips stated, the students “don’t have a framework at 18, 19 to
understand something like this” (BP-I2). Her inclusion of the two plane crash cases, as well as the Oklahoma bombing case illustrates the way that the community, as an element of an activity system, can influence the design of a learning activity. The second plane crash also illustrates the relevance of the object of the case activity, both professionally and personally.

The objects of two other minicase activities also focused on developing students’ knowledge about what is empirically known about a particular phenomenon, as well as the implications of this knowledge for professional practice. Phillips stated the depth of study of any minicase was influenced by student interest in the case as well as her knowledge of the case, and noted that she usually returned to these cases later in the course (BP-I1). A common feature of all minicase activities was the use of PPTs as a tool for structuring the case discussion. The course syllabi for the minicases described specific expectations for students’ participation in course activities, which established the rules for engagement. For example, Phillips asked students to “base your questions and comments on the readings and lecture content rather than on personal opinion … and contribute productively to class discussion” (BP-CS2). This reflected Phillips’s attention on the need to engage students by utilizing methods that support their learning in a way that mirrored academic conventions for forms of argumentation.

Thus, while I found patterns in the types of objects, reasons for the use of cases as tools, criteria for the selection of cases and case tools, and expectations with regard to students’ participation, the only pattern across the types of activity structures was in Phillips’s approach to the use of minicases. I found differences between the objects of the case activities and the characteristics of the tools selected for a case activity to be primary influences on the structure of all of Phillips’s case-based learning activities. The activities
structures also reflected Phillips’s teaching philosophy of needing to actively engage students in the learning process.

**Cultural-historic influences on Phillips’s case-based learning activity designs.** In this section I present the findings about pathways of influence of the faculty member, the institution, the profession, and the discipline on the characteristics of Phillips’s case-based learning activity designs. Historical factors that were found to influence the characteristics of the learning activities are also noted.

**Influences on the characteristics of objects.** The objects of Phillips’s case activities addressed what is theoretically and empirically known about different dimensions of social vulnerability to disasters, which is her area of expertise. This area of expertise reflects her disciplinary background in sociology, as well as the shift in her research interests over time. The objects reflected the need to link theory with practice and to develop students’ knowledge about what is theoretically and empirically known about different phenomenon associated with disaster and emergency management practice. This suggests the FEM programs at OSU are both academically and professionally oriented, and reflects the broader motives that led to the development of DEM as a field of study. While the objects reflected the applied aims of the program, the objects did not focus on development of professional competencies; rather, they focused on how theory and findings from empirical research could inform practice. The specific dimensions of practice that were looked at in Phillips’s case activities were linked to one or more phases of emergency management practice (i.e., mitigation, preparedness, response, and recovery). This is reflective of the dominant way of conceptualizing practice in the US. The objects did not appear to be influenced by the departmental home for the FEM program being the Political Science department.
Influences on the characteristics of tools. The faculty member, institution, disciplines, and profession were all found to have an influence on the characteristics of the tools in Phillips’s case-based learning activities. Phillips’s knowledge of how cases support learning (e.g., need to connect with students at an experiential level) was reflected in her criteria for the selection of cases (e.g., need for current cases) and criteria for the selection of case tools (e.g., need to bring a case to life to connect with students at an experiential level). Phillips’s experience as a disaster researcher afforded her the opportunity to use data and findings from her own research as tools case activities. Phillips’s own case-based research examples reflected her disciplinary orientation (sociology). She noted her knowledge of research methods was informed by her study with Quarantelli, who was one of the founders of the Disaster Research Center at Ohio State University.

Phillips’s selection criteria for case tools placed value on empirical ways of knowing. While in some cases (e.g., Katrina, minicases) a single disciplinary perspective was presented (e.g., sociology), in other cases (e.g., international cases, other minicases) multiple disciplinary perspectives were provided. The tsunami text provided a multidisciplinary perspective (i.e., geography, geology, anthropology, and political science) of the disaster impacts and response, while the recovery text, which Phillips authored, drew from a range of sociological theories (i.e., systems theory, vulnerability theory, sociopolitical-ecology theory, feminist theory, and emergent norm theory). The disciplinary orientation of research articles used in the cases was not always explicit.

Phillips also used tools that gave students an understanding of the reality of professional practice. These tools included grey literature produced in relation to specific events (e.g., Australian wildfire reports, United Nations reports on Haiti), as well as tools
associated with professional practice (e.g., approaches to vulnerability reduction, participatory recovery processes). These various tools are reflective of practice in different geographic and cultural-historic contexts.

The inclusion of fire management in the programming influenced the profile of students. The motives of this group of students and the inclusion of FEM in the program were a conjoined influence on the selection of the Australian fires case. The location of the institution in Oklahoma was reflected in the selection of the bombing and plane crash cases, while the location of the institution in the US context was reflected in the selection of other minicases and the Katrina case.

**Influences on the characteristics of activity designs.** The primary influences on the characteristics of Phillips’s case-based learning activity designs were the instructor and the institution. Phillips worked as a change agent to influence the profile and characteristics of students as subjects in a learning activity system. She noted the historical inequities in who is participating in DEM as a profession as well as student characteristics as being a motive for efforts to change the profile of students in the FEM program at OSU. Phillips attributed her sociological background, specifically feminist theorists and theory, to the development of her teaching philosophy, which included the need to actively engage students in the learning process while building them up, and the need to view students as cocreators of knowledge. Phillips’s teaching philosophy was reflected in the rules and division of labour in her case-based learning activity designs.

Courses at OSU were offered via simulcast, thereby enabling local as well as distance students to participate in the program. The influence of the use of simulcast on the case
activity design appeared to be limited. One affordance noted was that Phillips could bring other researchers into the case activities via Adobe Connect (Adobe Systems, 2012).

**Uniqueness of Phillips’s case relative to the others in this study.** Phillips was the only sociologist in this study. OSU was the only university with a focus on fire, in addition to emergency management, and the only university in which the DEM program was situated in a Political Science department. Further, Phillips was the only participant who spoke about actively working to address historical inequities in the profile of students in the program.

The unique contributions from the findings about how and why Phillips uses cases in her teaching were as follows. First, she was the only participant who provided an example of a case-based course. Second, three of her enabling criteria for case and case selection were unique; these were the (a) need for a current case, (b) need for common student starting points, and (c) the use of her own cases of research because she could bring them to life faster and in a richer way. These criteria reflect her particular understanding of how the specific characteristics of cases and case tools mediate students’ learning.

**Case Report #5: Dr. David McEntire**

At the time of the interviews for this study, Dr. David McEntire was a Professor in the Emergency Administration and Planning (EADP) program in the Department of Public Administration at the University of North Texas (UNT) where he had worked since first being appointed as a lecturer in the EADP program in 1999 (McEntire, 2005a). He also held the positions of PhD Program Coordinator and Associate Dean of the College (University of North Texas, n.d.). In July of 2015 McEntire became Dean of the College of Aviation and Public Service at Utah Valley University (D. McEntire, personal communication, June 6, 2015).
McEntire has a broad range of interests and is continuously researching new topics from different perspectives (D. McEntire, personal communication, July 3, 2012). His scholarship and research has focused on philosophical concerns such as the relationship between emergency management and sustainable development, as well as operational issues such as dispatch centers or grant administration (D. McEntire, personal communication, July 3, 2012). In 2010, McEntire was named the Dr. B. Wayne Blanchard Award Recipient for Academic Excellence in Emergency Management Higher Education (University of North Texas, n.d.; see also NDSU, 2014).

McEntire’s case report presents the findings from the analysis of data from four sources: (a) interview transcripts, (b) biographical information, (c) DEM program description from the UNT university website, and (d) copies of McEntire’s course syllabi and course materials. Materials received through personal communication with McEntire are cited in this case report using the participant codes in Table 7, whereas materials available to the public are directly cited.

Table 7

<table>
<thead>
<tr>
<th>Code</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>DM-I1</td>
<td>Transcripts from 1st interview with McEntire conducted on July 3, 2012.</td>
</tr>
<tr>
<td>DM-I2</td>
<td>Transcripts from 2nd interview with McEntire conducted on July 3, 2012.</td>
</tr>
<tr>
<td>DM-CS1</td>
<td>Course syllabus EADP 4040 <em>International Disasters</em>, Fall 2012, document received by email March 28, 2013.</td>
</tr>
</tbody>
</table>

*Note. EADP = University code for courses in the Emergency Administration and Planning program; PADM = University code for courses in the Public Administration program.*
**Faculty member profile.** This section of the case report will describe McEntire’s (a) disciplinary background and factors influencing his fields of study and (b) teaching experience and teaching philosophy. The data sources for compiling McEntire’s faculty member profile were the transcripts from the first interview (DM-I1) and his curriculum vitae (McEntire, 2005a).

McEntire described his disciplinary background as being “eclectic” (DM-I1). His decision to focus his undergraduate studies in Spanish and international relations (BA in 1989) was influenced by his family upbringing, which included international travel as well as having people from abroad stay with his family, some for extended periods of time (DM-I1; McEntire, 2005a). These experiences led to his interest in studying international politics, international relations, and development issues at the undergraduate level (DM-I1). McEntire’s graduate studies (MA in 1995 and PhD in International Politics in 2000) focused on the subfields of international and comparative politics and policy analysis (DM-I1; McEntire, 2005a). He said that while he was exploring topics for his master’s thesis there was an earthquake in California, which was followed by an earthquake in Japan the next year (DM-I1). McEntire saw the challenges the US and Japan faced in responding to these disasters, and he became curious about how disasters would impact developing nations and how the international community would respond (DM-I1). This led him to explore the disaster literature, and in doing so he came across the name of Dr. Tom Drabek, who happened to be situated in the Sociology department at the University of Denver where McEntire was studying (DM-I1). Drabek agreed to take McEntire on as a student in an independent studies course, and this provided McEntire with an introduction the literature about the sociology of disasters (DM-I1). Drabek also hired McEntire as a research assistant.
and they coauthored some papers together (DM-I1). McEntire said his experience in working with Drabek was a turning point in his career, as it led him to focus his research on issues at the intersection of disaster and international development (DM-I1). Drabek became a member of McEntire’s doctoral dissertation committee. His dissertation was entitled *From Sustainability to Invulnerable Development? Justifications for a Modified Disaster Risk Reduction Concept and Policy Guide* (McEntire, 2000). Concurrent to his graduate studies, McEntire gained front-line disaster management experience as a caseworker for the American Red Cross (DM-I1). He has continued to maintain a connection to the profession through participation on advisory committees and focus groups with FEMA, and he is an active contributor at the Annual FEMA Higher Education conference (DM-I1).

McEntire’s research and scholarship has continued to focus on disaster and emergency management topics (DM-I1). He said studying a diverse array of topics motivates him. He has an extensive publication record, including being the author and editor of texts in the emergency management field such as *Introduction to Homeland Security: Understanding Terrorism from an Emergency Management Perspective* (McEntire, 2009) and *Disciplines, Disasters, and Emergency Management: The Convergence and Divergence of Concepts, Issues and Trends* (McEntire, 2007). He has also authored numerous book chapters and journal articles as well as publications and courses for FEMA.

McEntire spoke about his teaching experience during the first interview (DM-I1). He began teaching in the DEM field in the fall of 1999, when he was first appointed at UNT, and regularly teaches undergraduate courses as well as courses that are cross-listed at the master and doctoral levels. McEntire’s teaching philosophy was influenced by his reflections on his experiences as a student. He said he has incorporated teaching practices that he liked, and
avoided things that he did not like as much. His goals in teaching include being prepared by staying current with the literature and ensuring a balance between theory and real-world practice in his coverage of material. He also recognizes the role of students in the learning process and has “high expectations of them in terms of their readings and assignments” (DM-I1). To support student engagement, McEntire says he tries to be entertaining by using jokes, stories, or dialogue to stimulate interest in an academic subject. Additionally, he tries to use different tools for delivery of the content, including videos, field trips, and guest speakers.

**Views of DEM professional activity.** McEntire spoke about his views of the distinguishing characteristics of emergency management as a profession during the first interview (DM-I1) and said his own views on the subject have shifted in the last few years. The primary object of an emergency manager’s role, McEntire said, is to build a comprehensive emergency management program that helps a community prevent and react to disasters. In this regard, McEntire noted, the scope of activity is much broader than preparedness and response, and needs to be inclusive of mitigation and recovery activities. The more recent emphasis on including homeland security as part of an emergency management portfolio, McEntire said, further extends the scope of activity to include prevention and protection issues. McEntire noted the nature of emergency management work requires that an emergency manager have political acumen, as well as the requisite managerial and leadership skills to facilitate and navigate in this environment. Therefore, an emergency manager’s success, McEntire said, is influenced by his or her ability to network and collaborate with others in executive or leadership positions within a community in order to build and implement an emergency management program.
McEntire’s description of the thinking skills needed by experts in the emergency management field was framed in relation to the characteristics of decision making in this field. Professional emergency managers, McEntire said, need to value and have an orientation towards seeking information required to make good decisions. While doing this, he said, emergency managers must also be capable of and comfortable with making decisions under conditions of uncertainty when full information is not available. In addition, when making decisions, “it is also important that emergency managers improvise … be creative and flexible and adaptive” (DM-I1). Planning to improvise, he said, is a particular attribute that is needed in the emergency management profession; this topic has been a subject of McEntire’s more recent research. Finally, McEntire said that in his teaching he tries to frame some of the ethical dilemmas professionals face in disaster situations in which there is not necessarily a right answer; rather, he suggested, emergency managers need to understand the range of options, pros and cons of each, and be able to make a judgement about what option to pursue.

**University profile.** UNT is recognized as being the first university in the US to offer an undergraduate degree in emergency management (McEntire, 2004; Neal, 2000). McEntire recounted the history of development of emergency management programming at UNT in a white paper prepared for FEMA on this subject (McEntire, 2004). FEMA regional officials recognized the need for emergency management training for government leaders and awarded UNT a “$1.2 million, five-year contract … to train state emergency management personnel” (McCollum, as cited in McEntire, 2004, p. 3). This training initiative led to the launch of the BSc in EADP at UNT in 1983 (McEntire, 2004, p. 3). McEntire recounted the needs and motives that influenced the development of the EADP program:
The majority of the emergency managers at the federal level are old-line federal defense people. They learned their jobs through trial and error, so to say. They are not college trained, and they are also of retiring age. There is a need for a revitalized, more extensively educated personnel to staff the federal, state and local levels.

(Herrick, as cited in McEntire, 2004, p. 3)

McEntire (2004) noted the early EADP curriculum had a practical response orientation, which was influenced by the backgrounds of the faculty members (i.e., police, fire, military) and by the civil defense doctrine that was prevalent at the time. Overtime, McEntire (2004) explained, the EADP program evolved to reflect the different disciplinary and professional backgrounds of the faculty leads for the program.

While the decision was slightly controversial, the UNT EADP program was placed in the Department of Public Administration in the College of Public Affairs and Community Service, because EADP was seen to be a relevant feeder program for the Master of Public Administration (MPA) degree (McEntire, 2004). The location in that department, in turn, influenced the structure and disciplinary orientation of graduate emergency management programming. UNT offers emergency management as a concentration in its MPA and PhD in Public Administration programs (DM-I1).

The history of development of emergency management programming at UNT had an influence on the disciplinary orientations of the DEM programming offered by the university. McEntire said the EADP program approaches emergency management as “a single, unique discipline, with its own literature and concepts and history” (DM-I1). This perspective is reflected in the seven core courses in EADP program, which are designed to equip students with “basic knowledge in emergency preparedness, response, recovery and mitigation”
The remainder of the EADP program, McEntire suggested, has an interdisciplinary orientation, with students choosing electives from an approved set of courses from related disciplines (e.g., geography, sociology, public administration, public affairs and community service; DM-I1; University of North Texas, 2016). In contrast, McEntire said, the disciplinary orientation of programs at the graduate level could be considered “bi-disciplinary” (DM-I1), in that the primary focus is on public administration, and emergency management is offered only as specialization and the selection of courses at the graduate level is less robust.

With regard to student profiles, McEntire said the undergraduate program is designed to support and attract students who are seeking “entry-level” (DM-I1) emergency management positions, while students in the master’s program are seeking careers in public administration. McEntire indicated the majority of students in the master’s program are studying on a full-time basis and tend to be in their early 20s (DM-I1).

**McEntire’s case-based learning activities.** McEntire explained a case “can be anything that helps to highlight or exemplify a principle, or a concept, or a topic, or subject that you are discussing” (DM-I1). In this regard, he said, a case “brings the topic or concept to life” (DM-I1), thus helping students to “know concretely what it is you are talking about” (DM-I1). For example, he said, “If you mention the word ‘emergent’ to your students, that’s a foreign concept, but if you highlight a case where people took on new roles in a disaster situation … it reinforces what you’re talking about—it adds understanding” (DM-I2). Thus cases “play a really critical role in the learning process” (DM-I2). McEntire also spoke about how his own understanding of his use of cases and their value was informed by the interviews with him for this study:
When I first started talking to you about this, I was thinking more in terms of a really in-depth, 30–40 minute discussion about a case … and I do that periodically … but in all of my classes, I do use a brief case to highlight to a concept or important term or an important debate in the field. So I am kind of surprised that I use them as much as I do, and I think that reinforces the fact that they are really important. (DM-I2)

From an activity theory perspective, McEntire’s reasoning for the use of cases in his teaching is based his understanding that cases, as tools, mediate students’ understanding of abstract concepts. Additionally, McEntire’s comments about not realizing the extent of his use of cases in his teaching reflects their conditional use when explaining or talking about abstract concepts. Thus, the use of cases, from the perspective of the hierarchical structure of activity, is in some instances an unconscious operation, rather than an intentional action.

Through analysis of the data, I found three different approaches to McEntire’s use of cases in his teaching activities. The examples of his approaches to the use of cases are from three undergraduate-level courses (International Disasters, Capstone Course, Disaster Response Operations and Management) and one graduate course (Homeland Security).

**Characteristics of McEntire’s objects.** The objects of McEntire’s case-based activities fell into two main categories: development of knowledge about and of different phenomenon. While I found several types of cases and case activities in the Homeland Security course, the object of the activities remained the same; the need was to develop students’ knowledge about terrorism and homeland security. The object was reflected in the course syllabus, which stated, “This seminar has the purpose of helping students understand terrorism and what is being done to counter it” (DM-CS3). The object of the case activities in the International Disasters course was to develop students’ knowledge about hazards,
disasters, and the practice of emergency management at the international level. As McEntire explained, he wanted students to understand “the broader scope of emergency management and some of the challenges they [students] might be dealing with depending on the context of the disaster” (DM-I2). The object of case activities in the Capstone course was to develop students’ knowledge about hazards and associated disaster impacts, as well their knowledge about emergency management functions associated with the response to different hazards. McEntire said his goal with the use of cases in this course was “to draw out some awareness of the hazard and the impact of the hazard, but also what has been done to respond to that particular hazard and how it’s both similar and different than other hazards” (DM-I2). The case activities in these three courses, while developing students’ knowledge about different hazards and their impacts, all included a practical aim. In contrast, the object of the case activity for the Disaster Response Operations and Management course (McEntire, 2005b) focused on development of students’ knowledge of how the incident command system can be applied in response to a disaster. Thus, it focused on development of procedural knowledge through simulated application in a particular context. I found the objects of McEntire’s case activities to be the primary influence in the selection of cases and case tools.

**Characteristics of McEntire’s cases and case tools.** McEntire’s cases were examples of hazards, disasters, their impacts, and the practice of emergency management. The necessary criterion for selection of all cases was they needed to link to the course and topic that was the object of study. The cases in the International Disasters and Capstone courses and some of the cases in the Homeland Security course were selected because of their instrumental value in illustrating the topic that was the object of study. Other cases in the Homeland Security course were chosen for the intrinsic value, with the reasoning for case
selection based on students’ need to study particular cases. The case in the *Disaster Response and Operations Management* course (McEntire, 2005b) was a constructed case used for a simulation; this was a different form of an *instrumental* case. The particular cases and case tools McEntire used in his learning activities will now be described.

In the *Homeland Security* course, McEntire used cases in his presentations and class discussions, as well as in a case assignment. In this course, McEntire used case examples in his presentations in because they were exemplar illustrations of a topic (DM-I2; DM-CS3). McEntire said he would almost always use certain case examples each year and included details about these cases in his teaching notes (DM-I2). One such example occurred when he was talking about “how terrorism is a kind of theatre” (DM-I2) and how “terrorists use the media to bring visibility to their issue” (DM-I2). To illustrate these ideas he would talk about how the events of September 11th were “done deliberately in the morning so that *Good Morning America* would provide coverage of that event as it was unfolding” (DM-I2). In addition to preplanned case examples, McEntire said he also used cases more spontaneously in this course. “If I can think of a case or an example, then I’ll highlight it or discuss that as well” (DM-I2). Alternatively, he said he sometimes asks his students for a relevant case example.

McEntire’s case assignment in the *Homeland Security* course also reflected the use of cases for their instrumental value (DM-C3). The case selection criteria, case content, and source of case material were prescribed in the course syllabus, which indicated, “Students will discuss an individual terrorist or terrorist group/state and discuss their ideology, operations and violent inclinations. Where possible, students should cover lessons from actual case studies” (DM-CS3). While McEntire prescribed the selection criteria, students
chose the case to study. Hence, a primary difference in this approach to the use of an instrumental case was the division of labour in case selection.

Additionally, McEntire selected intrinsic cases for use in the *Homeland Security* course. The need for the use of these cases emanated from the nature of the case itself. A characteristic of one of the intrinsic cases was it was a seminal event in US history. McEntire described the case and its importance in the introductory paragraph in the course syllabus:

On the morning of September 11, 2001, members of Al Qaeda manifested their hatred toward the United States by hijacking planes and intentionally crashing them into the World Trade Center in New York City. A short time later, the leaders of the United States declared war on terrorists and those who support them. Such attacks from those espousing extreme ideological perspectives amounts to one of the greatest administrative tests facing our nation. (DM-CS3)

The case tool was *The 9/11 Commission Report* (National Commission on Terrorist Attacks upon the United States, 2004), and chapters of the report were assigned as readings based on their link to weekly topics (DM-CS3). In contrast to the use of this seminal case, the McEntire also used current events as cases (DM-I2). McEntire scanned the news before each class to identify current events related to terrorism or homeland security, and he assigned his students to do the same, asking them to read local and national newspapers as well as to scan specific websites that provide information about terrorism and homeland security issues (DM-I2; DM-CS3). The value of the news media cases was their currency; students were able to examine course topics in the current context of their lives.

There were two sections in McEntire’s *International Disasters* course in which he assigned case readings for their instrumental value (DM-CS1). Early in the course students
were assigned to read specific chapters from a FEMA casebook entitled *Comparative Emergency Management: Understanding Disaster Policies, Organizations and Initiatives from Around the World* (McEntire, n.d.); McEntire was the editor of this text (DM-CS1). The first set of cases (Canada, Australia, New Zealand, and the Netherlands) provided background reading for a discussion about research in other countries, while the second set of cases (China, India, Malawi, Turkey, and Saudi Arabia) presented background reading for discussions about emergency management practices in other countries, and the impact of culture on practice (DM-CS1). Later in the course, McEntire assigned case readings to illustrate international disasters associated with different hazard types (e.g., natural disasters, transportation disasters, AIDS, terrorism; DM-CS1). The readings for these cases included chapters from Wisner et al.’s (2004) text *At Risk: Natural Hazards, People’s Vulnerability and Disasters*, which includes many case examples, as well as other readings and videos (DM-CS1). McEntire supplemented these assigned case readings with in-class references to other case examples that he had including in his teaching notes or that he spontaneously recognized as being of value to a discussion (DM-I2).

McEntire also assigned case readings in the *Capstone* course and said his selection of cases in the spring 2013 offering of the course was prompted by the need to keep the readings current (DM-I2). He said that for over a decade he had used Mileti’s (1999) *Disasters by Design* text, but the book was no longer adequately capturing all of the issues that needed to be addressed in the course (DM-I2). He tried using a different book for a year, but said it was not the right fit and not broad enough in scope (DM-I2), so rather than assigning a course text, McEntire chose a series of case studies from journals that were generally, but not exclusively, “based on recent events” (DM-I2). Two case readings were
assigned each week, and the readings were journal articles that had been selected to illustrate the particular hazards that were the focus of study for the week (DM-CS-2). For example, in Week 6, the topic was winter storms, droughts, and heat waves, and the case readings examined the 2002 North Carolina Ice Storm and the 1995 Chicago Heat Wave (DM-CS2). McEntire again augmented the assigned readings in the course with spontaneous reference to other cases, “using cases very quickly just to highlight a concept or an idea or a challenge or a problem or a solution” (DM-I2).

The final type of case McEntire used in his teaching was a simulation. McEntire had been contracted by FEMA to develop a course on *Disaster Response Operations and Management* (McEntire, 2005b), which is one of a suite of courses made available on the FEMA Emergency Management Institute Higher Education website. The purpose of the simulation was explained in the course outline, Session 39, which noted, “A case study is utilized to illustrate how incident command is applied in times of disaster” (McEntire, 2005b). McEntire had written 10 short vignettes that described an evolving scenario related to a fictitious fire at a large industrial facility. The case notes included questions and answers that an instructor could use to guide discussion about the application of incident command in response to the particular issues presented in each vignette. The case reflected a typical scenario in which the incident command model could be applied; hence a criterion for case construction was that it needed to be a realistic and typical example of a problem situation in which the incident command system could be used. As such, the case was both illustrative as well as a problem to solve.

In summary, the similarities and differences between McEntire’s cases and case tools reflected (a) the differences between the objects of case activities, (b) the preplanned as well
as spontaneous use of cases, and (c) the use of cases for their intrinsic as well as instrumental value. The next section will describe how these different factors combined within McEntire’s case-based learning activity designs.

**Characteristics of McEntire’s case-based learning activity designs.** This section will describe the findings from the cross-case analysis of McEntire’s different approaches to the use of cases in his teaching. I found three main variants. The first was the use of cases as readings and in-class discussions; within this general approach I found several distinct differences. The second approach was a case assignment, while the third approach was the use of a case as a simulation. The description about each of these approaches is based on findings from the analysis of the transcripts from the first and second interviews with McEntire, as well as his course syllabi and case tools. This section will conclude with a discussion about McEntire’s different approaches to the use of cases in his teaching.

McEntire spoke about his approach to the use of assigning cases as readings: “On various occasions I may assign something for the students to read and I may not even cover it in class. Because what I fear doing is assigning them reading and then I just regurgitate what they’ve read” (DM-I1). His reasoning for not restating the material that students were assigned to read was based on his own experience as student, as he had found this practice to be a waste of time (DM-I2). Hence, McEntire said when he assigned readings his practice in class would be to “talk about different material, or at least approach it differently, so that they [students] are getting something new” (DM-I1). McEntire’s other reason for covering additional case material in class was to give students a broader understanding of the phenomenon that was the object of study (DM-I2). Given this approach, students who completed assigned readings came to class with a form of experiential knowledge about the
academic subject, as well as a deeper understanding of particular cases. McEntire’s philosophy about the use of cases as assigned readings was reflected most strongly in the Homeland Security and International Disasters courses, and to a lesser degree in the Capstone course. His approach to the use of cases in these courses was as follows.

In the Homeland Security course students were assigned to read chapters of The 9/11 Commission Report (National Commission on Terrorist Attacks Upon the United States, 2004) as part of their reading for seven out of 13 classes (DM-CS3). There was one other assigned text for the course as well as other assigned readings on general topics related to terrorism and homeland security (e.g., terrorism and the media; DM-CS3). The course syllabus also “encouraged” (DM-CS3) students to “stay on top of current terrorist events or issues” (DM-CS3) by reading newspapers or other media sources. Each class began with a 5–10 minute discussion of current events in the media pertaining to terrorism (DM-I2). The presentation and discussion for the remainder of each class focused on a specific topic related to terrorism (e.g., structural, ideological and cultural causes of terrorism; terrorists characteristics, tactics and behaviour) or homeland security (e.g., anticipated attacks and policy; border control and transportation; DM-I2). When discussing any of these topics, McEntire said he might talk “a little bit” about the September 11th case, but that his goal was to develop students’ understanding of the diversity of terrorism threats present in students’ communities and around the world as well as approaches taken to deal with these threats (DM-I2). For example, McEntire said, while Al-Qaeda is a big threat, he wanted students to understand “there’s eco-terrorists, there’s terrorists that are against abortions, [and] there’s terrorists that are frustrated with the government for taking away their guns” (DM-I2); thus, he would provide students with other case examples to broaden their understanding of the
terrorism threat. These examples, he said, were either preplanned and in his course notes or spontaneous examples that came to mind during a discussion. As an example, McEntire said, he might highlight the Irish Republican Army as an example of a terrorist group, or he “might talk about intelligence gathering and discuss what the Special Air Service in Britain did to respond to their particular event” (DM-I2). A key difference between the use of assigned and supplemental cases in this course was that the assigned readings (September 11th and current event cases) were selected for their intrinsic value, while the supplemental readings were selected for their instrumental value.

McEntire said some of the subject matter in the International Disasters course lent itself to the use of cases, whereas other topics did not (DM-I2). The course syllabus reflected McEntire used assigned case readings in two specific sections of the course (DM-CS1). Chapters from the FEMA country casebook (McEntire, n.d.) were assigned readings for the topics of “research in other countries… [and] emergency management in other countries … [as well as] the impact of culture” (DM-CS1) in the second and third weeks of the class. The case readings for these weeks provided students with an in-depth understanding of hazards, disasters, and emergency management systems in different country contexts (DM-CS3). Later in the course McEntire dedicated three weeks to “Disaster Cases and Important Issues” (DM-CS3), with each week focusing on disasters associated with different types of hazards. In addition to the assigned readings for this course, McEntire used supplemental cases that drew from his own knowledge and reading about disasters in different international contexts. For example, McEntire used cases from Saudi Arabia and the Philippines to illustrate boating accidents as a form of transportation disaster (DM-I2).
McEntire said his goals for the Capstone course were to help students “summarize and synthesize what they’ve learned” (DM-I2) in other courses in the program to date and to “add some additional knowledge to help them prepare for their career[s]” (DM-I2). Each of the classes in the Capstone course had the same activity structure (DM-CS2). The first hour focused on “some type of practical application” (DM-I2), the second hour focused on “case/knowledge” (DM-I2) related to specific hazard types, and the third hour was set aside for a debate (DM-I2). The specific topics for case or knowledge for each week were listed in the course syllabus, as were the assigned case readings (DM-CS2). McEntire said he used cases in this course to develop students’ knowledge of (a) hazards, including specific terminology associated with different hazards; (b) hazard impacts, including the types of consequences that can be expected as well as where and when certain hazards are likely to occur; (c) the different emergency management functions that need to be performed, including which functions are generic and apply to all disasters and which relate more to certain types of hazard events (e.g., mass fatality management); and (d) general lessons learned from the response to particular disaster events (DM-I2). In addition to supporting development of students’ knowledge about these different things, McEntire had another motive for using cases in this class. As he explained,

My goal is that students would say, if confronted with a disaster, “Oh, this is just like that case we talked about in this particular class. And this is what I heard they did in that case. I don’t want to make that same mistake,” or “I better do it this way because it didn’t turn out for them so good last time.” (DM-I2)

Hence, McEntire viewed cases as a means of developing students’ knowledge about hazards, disaster, and emergency management practice in a way that supported retrieval and
application of this knowledge when solving future professional practice problems.

McEntire’s approach to the discussion about cases in this course varied. He said in some instances he would talk about one case in more detail, while at other times he would discuss multiple cases, spending 10 minutes on one case before moving to another one (DM-I2). His decision about the approach in any specific class, he said, “depends on the particular topic and the hazard and the literature that’s out there and what I’m familiar with” (DM-I2). Thus, while there was an overarching design and pattern to delivery of the course, the instructional approach within any particular class was influenced by the interrelationship between the subject, object, and tools.

McEntire’s attendance and participation rules, as detailed in the course syllabi, set the expectation for students’ engagement in class discussions:

If the class is actively involved in the discussion, each student should receive the full allotment of points in this area. If the class appears to be uninterested in the subject matter at hand, points will be awarded to those who make comments. (DM-CS-3)

These expectations, as a form of rule, reflect McEntire’s views about the role of students in the learning process.

McEntire’s second approach to the use of cases in his teaching was a case-based assignment. The description of the assignment was included in the previous section on cases and case tools. After researching a specific terrorist organization, students were required to deliver a 10-minute presentation to the class on their findings (DM-CS3). Hence, in addition to developing a deeper understanding of one terrorist organization, the class presentations were another means for students to learn about and compare different terrorist organizations.
McEntire’s third approach to the use of cases was the simulation he designed for use by others in their delivery of the Disaster Response Operations and Management (McEntire, 2005b) course. The characteristics of this simulation design were previously described in the section on cases and case tools. The function of the case in this activity was as a form of problem to solve. The form of the activity emanated from the characteristics of the object, which was to develop students’ knowledge of incident command systems. In contrast, all of McEntire’s other case activity designs, while having applied aims, were developed to support development of students’ knowledge about different phenomena.

Cultural-historic influences on McEntire’s case-based learning activity designs. This section describes how the faculty member, institution, disciplines, and profession were reflected in the characteristics of McEntire’s case-based learning activity designs. Evidence related to historical factors that appeared to influence the characteristics is also noted.

Influences on the characteristics of objects. The faculty member, institution, discipline, and profession were each reflected in the characteristics of the objects of McEntire’s case-based learning activity designs. The academic subject matter in the Homeland Security and International Disasters courses aligned with McEntire’s disciplinary background and interests (e.g., international politics, disaster, and development), while the objects in the Capstone course reflected his broader interests in emergency management. The difference between the practice of emergency management in different country contexts as well as the practice of providing international disaster assistance was reflected in the objects of the International Disasters course. Thus, the focus of what McEntire looked at in his case-based learning activities, while aligning with general characteristics of DEM as a field of study, was informed by his personal experiences. As McEntire noted, his international
interests were influenced by his family upbringing, his interests in disasters was spurred by challenges he saw in the response to earthquakes in the US and Japan.

The objects of the case activities that focus on developing students’ knowledge about hazards (including terrorism), disasters, and emergency management practice (including homeland security) all have an applied and practical aim, which can be traced back to the reasons for the development of DEM programming at UNT. The inclusion of a course on Homeland Security in the curriculum reflected the move towards integration of homeland security with emergency management practice post September 11th, as well as McEntire’s writing on this subject.

Influences on the characteristics of tools. McEntire’s beliefs about how students learn influenced in his approach to the use of cases in his teaching. His concern for not restating what was said in assigned readings was an influence on his practice of using additional supplemental cases in the classroom to aid in development of students’ knowledge about different phenomena. This practice was based on McEntire’s reflection of his own experiences as a student. McEntire’s own case knowledge relating to the object of any learning activity was a source of case material. His approach to the selection of cases in all three courses was focused on giving students a broad range of case examples that would help them when they were faced with similar situations in the future. Hence, he viewed case knowledge as being of particular importance to the profession. McEntire’s disciplinary background and interest in disasters in international contexts led him to acquire a case knowledge base that is inclusive of a broad range of international case examples.

The Capstone and International Disasters course cases were either journal articles or another form of scholarly publication. Thus McEntire placed an implicit focus on empirical
knowledge as a way of knowing about disaster events and emergency management practice. A primary source for the selection of case articles in the Capstone course was the journal *Disaster Prevention and Management*; there were a limited number of cases from other disciplinary journals. The context for most, but not all, of the case examples in the Capstone course was the US. The selection of the September 11th event as a seminal case reflected the importance of this case to the nation and, in turn, to the profession of emergency management. While the Homeland Security course examined the September 11th case in depth, other case examples from the international context were also used.

**Influences on the characteristics of activity designs.** The primary influences on the characteristics of McEntire’s case-based learning activity designs were the faculty member, institution, and profession. McEntire’s teaching philosophy and approach to the use of cases and case tools was influenced by his own experiences as a student and subsequent incorporation of practices that he found to support, rather than impede, the learning process. His discussion about not realizing the extent of his use of cases in his teaching, as well as his approach to using cases spontaneously in class discussion, suggests this approach to the use case examples functions at the level of an operation, whereas his preplanned use of specific cases functions as an action directed towards a goal. McEntire’s case activity designs placed focus on developing the body of knowledge, including case knowledge, needed by emergency management professionals. The courses at UNT were delivered in a face-to-face format, which supported McEntire’s spontaneous use of cases in class discussions.

**Uniqueness of McEntire’s case relative to the others in this study.** UNT was one of three universities associated with this study at which the DEM program offered is a specialization, rather than a full degree. While the departmental home for the degree
appeared to have an influence the fact that a specialization rather than a separate degree was offered, this disciplinary influence did not appear to be reflected in the case-based learning activities. Rather, McEntire’s own teaching philosophy and his own disciplinary background appeared to be strong influences on the characteristics of his approach to the use of cases in his teaching. McEntire was one of three faculty members who used cases for their intrinsic value. He was the only faculty member who had scripted a simulation activity that could be used by others.

**Case Report #6: Dr. William Waugh**

Dr. William Waugh is a Professor Emeritus at Georgia State University (GSU). Prior to retiring in 2013, Waugh held the position of Professor of Public Management and Policy/Political Science and was the Coordinator of the Graduate Certificate in Disaster Management, the Master of Public Administration (MPA), Master of Master of Public Management and Policy (MPP) and Master of Public Health (MPH) concentrations in disaster management at GSU. Waugh’s areas of expertise include disaster policy, terrorism and homeland security, as well as various dimensions of public administration including local capacity building (Waugh, 2014; W. Waugh, personal communication, March 23, 2013). In 2011, Waugh was awarded the Dr. B. Wayne Blanchard Award for Academic Excellence in Emergency Management Higher Education (NDSU, 2014).

Waugh’s case report presents the findings from the analysis of data from four sources: (a) interview transcripts, (b) biographical information, (c) DEM program description from the GSU website, and (d) copies of Waugh’s course syllabi and materials. Materials received through personal communication with Waugh are cited in this case report using the participant codes in Table 8, whereas publicly available materials are directly cited.
Table 8

Participant Codes for Personal Communication Data Sources Cited within Waugh’s Case Report

<table>
<thead>
<tr>
<th>Code</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>WW-I1</td>
<td>Transcripts from 1st interview with Waugh conducted on June 29, 2012.</td>
</tr>
<tr>
<td>WW-I2</td>
<td>Transcripts from 2nd interview with Waugh conducted March 27, 2013.</td>
</tr>
<tr>
<td>WW-CS1</td>
<td>Course syllabus PAUS 8271 Disaster Policy and Emergency Management, Fall Semester 2011, document received by email July 14, 2012.</td>
</tr>
<tr>
<td>WW-CM1</td>
<td>Course materials PAUS 8271, examples of PPTs used in the course, received by email July 14, 2012.</td>
</tr>
<tr>
<td>WW-CS2</td>
<td>Course syllabus PMAP 8281 Disaster Relief and Humanitarian Assistance, Spring Semester 2012, document received by email July 14, 2012.</td>
</tr>
<tr>
<td>WW-CM2</td>
<td>Course materials PMAP 8281, examples of PPTs used in the course, received by email July 14, 2012.</td>
</tr>
</tbody>
</table>

Note. PAUS = University code for courses in the Public Administration program; PMAP= University code for courses in the Public Management and Policy program; PPTs = Microsoft PowerPoint presentations.

Faculty member profile. This section will describe (a) the development of Waugh’s disciplinary areas of expertise and (b) his teaching experience and teaching philosophy.

Waugh completed three consecutive degrees in political science (BA in 1973, MA in 1976, PhD in 1980; Waugh, 2014). His graduate work was in the area of comparative political science, initially with a focus on Eastern European foreign policy, and his dissertation examined policies and programs related to the management of international terrorist events, with a specific focus on “whether you negotiate with terrorists in hostage cases” (WW-I2).

Waugh cites his dissertation work as the beginning of his interest in the emergency management field. Waugh said he and others found it difficult to get work in the political science field and so they “gravitated” (WW-I1) to the public administration field at a time “when there were few people with that background” (WW-I1). Although Waugh conducted
research, taught and published in the political science and public administration fields, his focus began to shift to the emergency management field. The chronology of this shift, as explained by Waugh during the first interview (WW-I1), is as follows.

In 1984, while working at Kansas State University (KSU), Waugh was selected as a fellow to attend a 2-week program cosponsored by FEMA and the National Association of Schools of Public Affairs and Administration; this experience, he explained, served as his “indoctrination” (WW-I1) into the emergency management field. In 1985, Waugh secured an appointment at GSU and began teaching a special topics class in emergency management. After 4 or 5 years, Waugh said, he turned the special topics class into an emergency management course, and later added a second course. Waugh eventually combined the courses into a graduate certificate in emergency management, and to help secure a student base, the courses were offered as an emergency management specialization in the MPA, MPP, and MPH programs, and eventually the PhD in Public Policy program. Emergency management also became a focus of Waugh’s research and scholarship. He has authored and edited numerous emergency management texts (Georgia State University, n.d.), such as *Emergency Management: Principles and Practice for Local Government* (Waugh & Tierney, 2007), and has been the editor of the *Journal of Emergency Management*. He also served as Chair of the American Society for Public Administration’s Section on Emergency and Crisis Management (Georgia State University, n.d.). Concurrent to his academic work, Waugh was a trainer and consultant on a myriad of topics related to emergency management, terrorism, and homeland security (Waugh, 2014; WW-I2). Thus, over time, and influenced by his fellowship experience at FEMA, Waugh’s disciplinary base, he said, “moved pretty far away from where I started” (WW-I1). During the first interview he described himself as an
“outlier” (WW-I1), stating, “I don’t really fit my own department” (WW-I1). While Waugh’s work experience has predominantly been in academia, one of the factors that set him apart and helped him connect to emergency managers was his understanding of stress and crisis, which he developed through his early military experience as an infantry squad leader, and well as work in the private sector (WW-I1).

In addition to his emergency management teaching experience at GSU, Waugh has also taught in a practitioner-oriented DEM program at the University of Nevada Las Vegas, and conducted training with a diverse range of stakeholders (e.g., US State Department training for senior foreign officials, local government, law enforcement officers, and military units; WW-I1). When asked to speak about the influences on his teaching philosophy, Waugh said,

Typically, in the university, we pride ourselves in never having any background in education. So our philosophies tend to be our own, a little bit idiosyncratic and not in conformity with any sort of the basic or prevalent ideas of the day. (WW-I1)

Hence the basis of his knowledge about teaching and learning is from his own experience. With regard to teaching and learning, Waugh said theory on its own “makes little sense if you are not connecting it to the real world” (WW-I1). Hence, theory needs “to be given life” (WW-I1) by making explicit connections to what goes on in the real world. In addition, in making these connections, Waugh said, it is important for students understand the complexity of real life “is messier than the purely theoretic might assume” (WW-I1). The ability to connect the theory with life was one means, Waugh said, to engage students in the learning process. Waugh also saw teaching as a means of learning:
There are occasions where I’m throwing things out that I am mulling over but don’t really have a point of view on yet. I’m trying to decipher what is going on. And sometime they [students] will come up with interpretations that I think are really neat.

(WW-I1)

Waugh said this bidirectional process takes him away from always “professing” (WW-I1). Further, Waugh said he incorporates and gives credit to ideas that students have generated in texts that he has written (WW-I1).

**Views of DEM professional activity.** Waugh explained his views of the characteristics of what emergency management professionals do, how they think, and the ethics and values that should guide practice during the first interview (WW-I1). He indicated his views of these characteristics build from his time spent reviewing applicant files for the IAEM Certified Emergency Manager credential, as well as his participation “in the group that created the [IAEM] Principles of Emergency Management” (WW-I1).

The primary role of an emergency manager “is to be the focal point for coordination and collaboration, that is, the person who facilitates that, not necessarily the person who leads that process” (WW-I1). An emergency manager’s role, he added, is to be responsible for ensuring all of the constituent resources “come together and function together,… [thus] creating that unity of effort” (WW-I1). However, Waugh said, there can be conflicting perspectives of what leadership is and what it looks like. He had heard stories “where emergency managers were fired because they were not standing out front, apparently leading things; … [rather] they were in the back, assuring that all of the appropriate pieces came together” (WW-I1). Given the characteristics of what emergency managers do, Waugh noted
emergency management is a good fit with public administration programs since they focus on things such as human resource management and organizational behaviour.

Waugh asserted the characteristics of how emergency management experts think should reflect their roles as coordinators and facilitators. Hence, they need to be able to analyze the context in which they are working; this includes being able to identify “all the stakeholder groups, their cultures, what they bring to the game, and understanding their egos as well as missions” (WW-II). In this regard, Waugh suggested emergency managers need to be able to deal with and make sense of “a very complex array of networks” (WW-II).

Waugh noted there has been a general lack of attention paid to the ethical dimensions of decision making in emergency management practice. Core values that should guide the field, he suggested, were common sense and fairness. One of the challenges was emergency managers could be “too pragmatic” (WW-II). For example, he said, an emergency manager’s decision to support a store like Wal-Mart opening quickly after a disaster, while having some practical value, can have an impact on the overall ability of a community to recover after a disaster if attention is not also paid to getting smaller locally owned stores up and running quickly as well. Hence, the ethical implications of decision making, Waugh suggested, needs to take into account a broader analysis of the context and the potential consequences of decisions.

**University profile.** The development of emergency management programming at GSU began with Waugh’s special topics class and continued on with the development of the graduate certificate and specializations with the MPA, MPP, and MPH programs (WW-I). The MPA and MPP programs are situated in the Department of Public Management and Policy and the MPH program is situated in the School of Public Health (W. Waugh, personal
communication, March 26, 2015). Waugh said his own disciplinary grounding in public administration, which he said is now called public management, was an influence on the disciplinary orientation of emergency management programming at GSU (WW-I1). In addition, public management, Waugh said, is inherently a multidisciplinary field (WW-I1).

The profile of students in the MPA and MPP programs, Waugh said, is fairly traditional (WW-I1). While the entrance requirements (e.g., quantitative skills, graduate record exam) preclude the participation of most emergency management practitioners (e.g., fire and police), Waugh said, some military personnel have been admitted. The graduate-level programs, he said, generally attract older students. Waugh said students in the MPP and MPA programs have different interests and motives, and a challenge for him was to meet the demands of both groups in his two graduate emergency management courses. Waugh noted students in the MPA program generally want to be emergency managers or run nongovernmental organizations, while students in the MPP program want to be policy analysts. Despite these differences, Waugh said students in each program need to know about management as well as policy (WW-I1).

Waugh’s case-based learning activities. Waugh described his reasoning for using cases during the first interview (WW-I1). Cases, he explained, “give life to more abstract ideas” (WW-I1), thus enabling students to “connect reality and theory” (WW-I1). In addition, Waugh believed the visual images associated with cases support remembering. Visual images “stick in your mind” (WW-I1) in a way that is different from textual material or statistics. Waugh’s description of images that “bother” (WW-I1) him included the jumpers on September 11th, and the images of dogs on the porches following Katrina (WW-I1). With regard to the latter, he said, “Intellectually, I know that people died, but that was the image
[of the dogs] that sticks with me” (WW-I1). Finally, Waugh said some of his courses have been defined by big disaster events, such as the Haiti earthquake and Hurricane Katrina, which occurred just after the start of his courses. He said, “You could not ignore that those events had occurred” (WW-I1). While the events helped provide context for course material, they “tended to overcome the syllabus” (WW-I1), thus creating a need for him to catch up on other material later in the course (WW-I1). Waugh noted that in addition to using cases in his teaching, he also incorporates cases in the books he writes. From an activity theory perspective, Waugh’s explanations for why he uses cases in his teaching reflect (a) his understanding of the mechanism of how cases and case tools support students’ intrapsychological development and (b) how events, which occur in the larger community, become tools and objects of study.

During the first and second interviews, Waugh described his approach to the use of cases in two courses: Disaster Policy and Emergency Management (WW-CS17) and Disaster Relief and Humanitarian Assistance (WW-CS2). Through analysis of the interview transcripts and the course syllabi, as well as copies of case tools (i.e., PPTs and texts), I identified one primary approach to Waugh’s use of cases in his teaching. While I found variations in the approach, they were minor. Cases were all examples of phenomena that were the object of study; hence, their primary function was to illustrate these. This section will describe the characteristics of the objects, tools, and activity designs of Waugh’s approach to the use of cases in his teaching.

7 While the course syllabus for Disaster Policy and Emergency Management was from the fall of 2011, the interview focused on discussion of his delivery of the course in the fall of 2012.
Characteristics of Waugh’s objects. The phenomena that were the object of study in Waugh’s case activities all focused on developing students’ knowledge about different phenomenon. The focus of the Disaster Relief and Humanitarian Assistance (WW-CS2) was in response to domestic and international disasters, roles of governments and nongovernmental organizations in responding to catastrophic events, and policy issues associated with disaster relief and humanitarian assistance. Waugh said this course has historically “had a lot to do with recovery” (WW-I2). The focus of the Disaster Policy and Emergency Management course, as described in the course syllabus, was “the evolution of US disaster policy and the practice of emergency management, with particular attention to the roles of local governments and nonprofit agencies in disaster management” (WW-CS1). Waugh explained he was “continually reinventing” (WW-I1) these two courses to ensure he was “meeting student needs” (WW-I1).

The specific topics and flow of topics within each of the two courses reflected the content and structure of the required textbooks. For example, the sequence of topics in the Disaster Policy and Emergency Management course aligned with Sylves’s (2008) Disaster Policy and Politics: Emergency Management and Homeland Security book, and with Waugh and Tierney’s (2007) Emergency Management: Principles and Practices for Local Government book, which were both assigned readings for the course (WW-CS1). Hence, the objects or what is looked at in each course, while fitting in with the broader aims of the course and curriculum, were also influenced by the characteristics of the course texts, as tools. The specific interplay between the objects and texts in the selection of cases and case tools in Waugh’s approach to using cases in his teaching will described in the next section.
**Characteristics of Waugh’s cases and case tools.** Waugh spoke about his reasons for selecting cases and case tools during the second interview (WW-I2). The cases in the first half of spring 2012 delivery of the *Disaster Relief and Humanitarian Assistance* course draw from Aldrich’s (2012) text called *Building Resilience: Social Capital in Post-Disaster Recovery*. This text, Waugh said, examined six major international disasters from a political science perspective; one of the cases was the 1923 earthquake in Japan, while the others were more recent events. The cases in the second half of the course, Waugh said, focused on a different set of international disasters as presented in the text *Post-Disaster Reconstruction and Change: Community Perspectives* (Barenstein & Leemann, 2012). Waugh said this edited volume was written by social anthropologists, and hence provided students with a different disciplinary perspective on disaster recovery. He had used a different set of texts in the 2011 version of the delivery of the course, and while those texts made reference to cases, the structure of the texts was not case based, as the 2012 texts were. Hence, in the 2011 iteration of the course Waugh needed to select cases to help illustrate the course topics. In both iterations of the course the case tools were an influence on case selection, but for different reasons.

While the object of the course, with a specific focus on disaster recovery, was a primary influence on Waugh’s selection of the two texts used in the 2012 delivery of the *Disaster Relief and Humanitarian Assistance* course, his personal motives, students’ motives and needs, and the availability of suitable course texts were also criteria that influenced text selection. The disciplinary perspective in the text by Aldrich (2012) aligned with Waugh’s own political science background. Waugh said he selected the Barenstein and Leemann (2012) text because he was “fascinated” (WW-I2) with having a book written by social
anthropologists who provided a different disciplinary perspective than his own. Given that Waugh had “absolutely no background” (WW-I2) in social anthropology, he was interested in their different approach to framing questions for study (WW-I2). For example, he said, “Success in housing recovery was how satisfied people were with their homes, rather than are they safer than they were before the disaster?” (WW-I2). He also said he gets bored with assigning the same texts from year to year and wanted to read the book. Additionally, he noted it was difficult to find appropriate texts for the course, and both texts were relatively new releases that aligned with the focus of the course. Furthermore, a particular theme within both of the texts selected, Waugh said, was on the role of social capital in disaster recovery. Waugh explained, “A lot of my students are in nonprofit administration and taking courses in social capital” (WW-I2), hence the texts related to their other coursework.

Waugh’s approach to the selection of cases and cases tools in the Disaster Policy and Emergency Management course was also influenced by his choice of course texts, but in a different way. The two required textbooks for the course, as reflected in the 2011 course syllabus, were Sylves’s (2008) Disaster Policy and Politics: Emergency Management and Homeland Security book and Waugh and Tierney’s (2007) book on Emergency Management: Principles and Practices for Local Government. The topics in first half of the course followed the flow of chapters in Sylves’s text, and the second half followed Waugh and Tierney’s text (WW-CS1). In some weeks, a topic was also linked to specific hazards (WW-CS1). For example, the week that focused on mitigation also examined earthquakes and floods (WW-CS1). Since the structure of the course texts was not linked to specific disaster events, Waugh needed to select examples of disasters that served to illustrate the phenomena under discussion each week; some of the specific cases were referenced in the
course syllabus (WW-CS1). For example, he used the 1918 flu epidemic as an example of a public health emergency, the Sioux City airline crash to illustrate a discussion on disaster preparedness and response, and Haiti and Japan to illustrate management of catastrophic disasters (WW-CS1). Waugh’s selection of cases in this course was also influenced by current events (WW-I2). Hurricane Katrina and the Haiti earthquake, while occurring in different years, both happened during the first week of delivery of the Disaster Policy and Politics course (WW-I2). As previously noted, Waugh said these types of seminal events overtook the course and became both an object of study as well as a tool for providing context for discussion of course topics. Furthermore, when Hurricane Sandy occurred in 2012, it became a focus of class discussion, which afforded the opportunity for comparison with the lessons learned, or not learned, from the response to Hurricane Katrina (WW-I2).

Regardless of the course and course texts, Waugh said he tends to use PPTs to “set up” (WW-I1) discussion about a particular case. This includes providing background information about the hazard and risks associated with a disaster, so students “understand things that are not necessarily covered in the case study … [but that are] important to understanding the hazard … and levels of risk” (WW-I1). Waugh said that with any event that occurs, he has “got a wealth of information that is a click away” (WW-I1), which he has amassed over his teaching career. This includes general material about specific hazards, as well as related research material, when it is available. He then augments this with specific information on the impact and issues associated with a specific disaster. When presenting information on a hazard or disaster, Waugh said he has a particular preference for the use of shorter videos, and that this was much easier now with the availability of YouTube (2016).
videos. Waugh’s motive for the use of visual media was they better supported remembering or retention of concepts than do long narrative cases.

The cases in the two courses Waugh taught were all instances of phenomena associated with major domestic and international disaster events. His criteria for selection of cases were influenced by the phenomena that were the object of study and by the textbooks selected for the course. The affordance of specific textbooks determined whether or not Waugh needed to select additional cases for study and the amount of supplemental material to include in his PPTs. The course texts determined the disciplinary lens used for developing students’ knowledge about the object of study. In addition, Waugh’s use of visual media, particularly videos, was a means of developing students’ ability to remember. Waugh’s approach to using cases in his learning activity designs will now be described.

Characteristics of Waugh’s case-based learning activity designs. This description of Waugh’s approach to the use of cases reflects the findings from analysis of the transcripts from the first and second interviews, his course syllabi, as well as examples of PPTs and videos that he has used in his courses. Waugh’s case activities had a common design. Chapters from the required textbooks were assigned as readings for each class (WW-CS1; WW-CS2). Waugh used a PPT and videos to “set up” (WW-I1) the class discussion about a particular case and topic. Waugh said that, very occasionally, he will present a video that he does not “set up” (WW-I1), rather he lets students pick out what they see as being important about a case. After providing the background information related to a case, Waugh moves into presentation and discussion of the specific topics that were the object of study for the week (WW-I1). Waugh’s approach to the presentation of material in his classes appeared to be the same regardless of whether or not the assigned texts were case based in their structure.
While Waugh’s class designs tended to follow the same basic structure, he also noted some of his classes were “pretty ad hoc” (WW-I1) and he will “make things up” (WW-I2) as he walks into class. This spontaneous dimension to his teaching reflected the influence of his personal motives, such as “things that are on my mind, things that I’m working on” (WW-I1), on an activity design as well as the influence of external events (e.g., major disasters). Waugh said his vast repertoire of material on hazards and disasters collected during his teaching career makes it easy for him to be flexible in the classroom, as he can quickly put together material related to almost any topic.

Given that, the objects of Waugh’s case activities all focused on developing students’ knowledge about different phenomena, and the primary function of cases in his activity designs was to illustrate and contextualize the phenomena that were the object of study. The exception was when a major disaster event occurred during a particular course. As Waugh indicated, “You couldn’t ignore that those events occurred, and they were sort of the topics of the day” (WW-I1). In these instances, the event, as a case, could become either the object of study or serve as a live illustration of the planned topic of study.

**Cultural-historic influences on Waugh’s case-based learning activity designs.**

The different cultural agents that were found to influence the characteristics of the various elements of Waugh’s case-based learning activity designs are described in this section. Examples of historical factors influencing the characteristics of the objects are also noted.

**Influences on the characteristics of objects.** Waugh had designed and was continuously adapting the two graduate emergency management courses he taught at GSU. A central focus of both courses was on policy and the role of governments and not-for-profit organizations; these topics align with Waugh’s disciplinary background in public
management and political science and his areas of expertise in the emergency management field. Waugh’s development as a scholar in the DEM field had been supported by a joint initiative between FEMA and the National Association of Schools of Public Affairs and Administration.

The objects of Waugh’s case activities were also aligned with the focus of the Department of Public Management and Policy in which the emergency management courses were situated. The objects of study in the two graduate courses Waugh taught reflect the intersection of the departmental disciplinary orientation (i.e., policy and public management) with the practice of emergency management. Waugh’s adaptation of the course content to meet the needs of students (e.g., need to understand policy, need to understand practice) was an example of an indirect influence of the institution on the objects of study, with student characteristics reflecting the program focus and admission criteria.

**Influences in the characteristics of tools.** The characteristics of Waugh’s case tools reflected the influence of the faculty member, institution, discipline, and professions. Waugh’s beliefs about how cases and case tools support learning were reflected in his criteria for selection of cases (e.g., “give life to concepts and theories” [WW-I2]) and case tools, such as the use of visual media to support remembering. Waugh’s own resource library developed through his years of teaching enabled him to easily pull together background material to help set up discussion of any case. This gave him the ability to turn his attention to current major disaster events that were of interest to him as well as his students.

The disciplinary orientations of the texts (e.g., political science, social anthropology) used in the courses reflected Waugh’s statement about DEM being a multidisciplinary field of study, as well as his own disciplinary background (e.g., political science, public
administration) and the departmental home for the DEM program. While the course texts drew from multidisciplinary perspectives, I found an explicit focus on the use of texts that presented a political science and public management perspective, as well as on topics of importance to students in the program (e.g., social capital). The alternative disciplinary perspectives presented (e.g., social anthropology) were influenced and constrained by the availability of current relevant texts as well as Waugh’s own interests in these different disciplinary perspectives. The particular cases that were looked at were influenced by which cases had been examined in the particular texts that Waugh selected. Each of Waugh’s cases, while relating to particular disasters, also linked to different dimensions of emergency management practice.

Influences on the characteristics of activity designs. The primary influences on the characteristics of Waugh’s case-based learning activity designs were the faculty member, case tools, and institution. Waugh’s approach to the use of cases in his teaching reflected his understanding of their function in the learning process, which is to illustrate and contextualize the material that is the object of study. His course syllabi outlined the sequence of topics for the courses, with the flow of topics reflecting the structure of the assigned texts. His choice of utilizing PPTs and videos appeared to be consistent across his approach to the use of cases, and he was able to quickly adapt his courses and classes to accommodate a focus on current major disaster events when they occurred. Furthermore, he brought his own interests and intellectual curiosity into the classroom by engaging students in discussion about topics that were of importance to him, but for which he had not yet formulated an opinion. The two primary influences of the institution on the activity designs were in the characteristics of the students, which reflected both the rules of the institution with respect to
admission criteria, as well as the disciplinary home in which the emergency management programs were housed.

**Uniqueness of Waugh’s case relative to the others in this study.** Waugh was the only political scientist in the group, and he was the only one who had participated in the FEMA and National Association of Schools of Public Affairs and Administration fellows program that was launched in 1984; the influence of these fellows has been recently examined, and Waugh’s reach was noted as being distinctive with regard to publication network reach (Comfort, Waugh, & Cigler, 2012). Waugh’s case tools, relative to others, were primarily case-based texts, written from specific disciplinary perspectives, including his own, or from multidisciplinary perspectives. Waugh’s adaptable and flexible approach to course design was unique relative to others in this study. His long teaching career and accumulated wealth of educational resources made it easy for him spontaneously shift gears to focus on major disaster events or to pursue ideas he had been thinking about as he walked into class for the day.

**Case Report #7: Dr. Greg Shaw**

Dr. Greg Shaw retired in September 2014 from the positions of Associate Professor of Engineering Management and Systems Engineering, Senior Research Scientist, and Codirector of the Institute for Crisis, Disaster and Risk Management at The George Washington University (GWU), in Washington DC. He joined the institute in 1996 as a Program Manager and Director of Training and Education, and in 2008 he was appointed as a full-time faculty member at GWU. Shaw’s areas of expertise, as stated in his curriculum vitae (Shaw, 2013) and his biography on the GWU (n.d.-b) website are crisis, risk, and emergency management, with specializations in organizational continuity as well as training,
education, and human development. These areas of expertise build from his extensive educational and professional experience.

Shaw’s case report presents the findings from the analysis of data from four sources: (a) interview transcripts, (b) biographical information, (c) DEM program description from the NDSU university website, and (d) copies of Shaw’s course syllabi and course materials. Materials received through personal communication with Shaw are cited in this case report using the participant codes in Table 9, whereas publicly available materials are directly cited.

Table 9
**Participant Codes for Personal Communication Data Sources Cited within Shaw’s Case Report**

<table>
<thead>
<tr>
<th>Code</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>GS-I1</td>
<td>Transcripts from 1st interview with Shaw conducted on May 29, 2012.</td>
</tr>
<tr>
<td>GS-I2</td>
<td>Transcripts from 2nd interview with Shaw conducted on March 29, 2013.</td>
</tr>
<tr>
<td>GS-CM1</td>
<td>Course materials EMSE 6345: (a) Hindcasting exercise PPT, (b) Lawnjeray® Corp, “Let us dress up your lawn,” Background Information© 2011 Attainium Corp, documents received by email May 29, 2012.</td>
</tr>
</tbody>
</table>

*Note.* EMSE = University code for courses in the Engineering Management and Systems Engineering program.

**Faculty member profile.** This section will describe the development of Shaw’s disciplinary areas of expertise as well as his teaching experience and teaching philosophy.

Shaw’s postsecondary studies spanned a 40-year period, during which he obtained five degrees (Shaw, n.d.). His undergraduate degree was a Bachelor in Engineering (in 1969). He holds three master’s degrees. The first was in liberal studies with a physics focus (in 1973), the second was in education and human development (in 1982), and the third was in business
administration (in 1988). Shaw completed his DSc in Engineering Management at GSU in 2004. While Shaw has studied in a number of different fields, he stated that from a disciplinary perspective, he is “first and foremost an engineer and a physicist” (GS-I1) and that this disciplinary background provided “the kind of structured, scientific way of thinking about things, solving problems and that made it attractive to me to get involved in emergency management” (GS-I1).

Shaw’s emergency management experience was developed during his 27-year career with the US Coast Guard. His Coast Guard work included activities such as interdicting drugs, enforcing environmental legislation, as well as emergency response and humanitarian assistance (GS-I1). It was during Shaw’s last assignment at the US Coast Guard headquarters that he starting thinking about the need for business continuity management (GS-I2). He explained that he was placed in charge of a building housing 2,400 people and began to think about the consequences of what would happen if the building was destroyed or otherwise inaccessible so that the tenant Coast Guard personnel could not go to work. While Shaw recognized the need for business continuity planning, he was not able to garner the organizational support to address this need until a major flood came “within minutes of totally ruining our building” (GS-I1). After this event, Shaw was freed up to work on developing the continuity of operations and emergency plans for the Coast Guard headquarters (GS-I1). Shaw’s penultimate assignment with the Coast Guard was as Director of their Training and Education System (Shaw, 2013). He left the Coast Guard in 1996, at

8 This story provides a good example, from an activity theory perspective, of how needs emerge from activity, and in turn become the motive for further activity.
which time he assumed an administrative position at GWU (G. Shaw, personal communication, February 25, 2015).

Shaw’s interest in business continuity issues continued after he left the Coast Guard. His doctoral dissertation examined the core competencies required of executive-level business crisis and continuity managers. In 2001, Shaw became certified as a Disaster Recovery Institute Business Continuity Professional (Shaw, 2013). Shaw’s scholarship record, which includes journal publications, book chapters, research reports, and conference presentations, has an applied professional focus on business continuity issues, as well as other aspects of risk and emergency management practice (Shaw, 2013). The next section will describe Shaw’s teaching experience and explain influences on the development of his teaching philosophy.

Shaw’s has over 20 years of experience in training, education, and human development activities (Shaw, 2013). In addition to teaching at GWU, he has taught at the Massachusetts Maritime Academy, the Coast Guard Academy, as well as several other universities (GS-I1; Shaw, 2013). Shaw taught in graduate programs at GWU and students in his classes were from different but related programs of study and took the same core courses in crisis, risk, and emergency management (GS-I1). Shaw stated his extensive postsecondary educational experiences were formative in the development of his teaching philosophy and understanding of how people learn (GS-I1). As he explained,

Sitting in a class and having someone try to open up the top of my head and pour information in never really worked very well for me…. I found that to be boring, and in those particular classes, the only thing I got out of it was a grade at the end of it,
and I learned what I learned because I took the initiative to learn it, not what somebody was telling me. (GS-I1)

Building from this experience, Shaw said he tries to actively engage students by creating “participatory types of experiences” (GS-I1) in which students are given responsibility for contributing to the learning process. For example, he said that on a weekly basis he will assign one or two students responsibility for bringing a topic for the class to discuss (e.g., current event or research topic). He noted this approach to teaching is particularly important because the courses at GWU are delivered in the evening (6:10-8:40 p.m.) to people who have been working all day. The next section will trace the development of emergency management programs at GWU, explain the particular characteristics of emergency management programs at the institution, and describe the profile of students who are enrolled in programs there.

**Views of DEM professional activity.** Shaw indicated he has seen a shift over time in the profile of emergency managers and the focus of their work. When the emergency management programs at GWU were first launched, Shaw said emergency management was a second career for first responders (e.g., police, fire) and military personnel (GS-I1). First responders, in keeping with the action orientation of their first careers, had a more “limited focus” (GS-I2) on the response dimension of emergency management. As emergency management “evolves into a profession” (GS-I2), younger people are seeing the field as a lifelong career option. Shaw spoke about the motives of students now drawn to study and work in the emergency management field: “They have that fire in the belly to help other people and make things better” (GS-I1). Emergency management, Shaw indicated, fulfills their desire “to make a difference in the world” (GS-I1). Students expect their program of
study to provide them with training to engage in visible activities associated with emergency management such as sandbagging and managing shelters (GS-I2). However, these operational roles are not the focus of the work of an emergency manager; rather, an emergency manager is the person who is “behind the scenes providing support and logistics for the people on the frontline” (GS-I2) during an emergency. Shaw further explained that an emergency manager’s work encompasses more than response activity. The role of an emergency manager is as a “member of the leadership of a community or organization” (GS-I2). In addition, in the conduct of the role, an emergency manager should not be “directive” (GS-I2); rather, an emergency manager works with others in a “collaborative … [way and] coordinate[s] between the first response capabilities, leadership of the community or organization, and the community itself” (GS-I2). From an activity theory perspective, Shaw’s description of the role of an emergency manager is an articulation of the division of labour between the community that an emergency manager is a part of, and the object of their work, which he suggests is aimed at engaging others in building consensus about protection priorities and the associated activities that need to be undertaken (GS-I2).

When asked to comment on the characteristics of expert thinking in the emergency management field, Shaw asserted experts need to have the ability to critically analyze a given situation. This ability requires “looking at things as a system” (GS-I1) and understanding how the constituent parts fit together. Additionally, Shaw said, experts need to have a “structured and defendable approach … to developing information for decision making” (GS-I2). In keeping with the view of DEM as a management activity, Shaw suggested experts in the field needed to have a strategic and longer-term, rather than tactical, orientation in their approach to thinking about situations (GS-I1).
Shaw’s comments on the values that should guide emergency management practice emanate from his view of an emergency manager’s role in a community or organization. In keeping with the view an emergency manager needs to be collaborative rather than directive, he or she needs to be able to present an expert opinion in a “balanced and supportable and transparent manner” (GS-I2). In addition, if an emergency manager’s opinion does not match those of other stakeholders, “you have to live with that” (GS-I2). In this regard, the values that guide emergency management while focusing on protection of communities and organizations reflect the perspectives of different stakeholders and their consensus as to what is most important.

**University profile.** Shaw shared the history of development of emergency management programming at GWU during the first interview (GS-I1). Shaw explained that in 1998, Dr. Wayne Blanchard from FEMA approached GWU about offering a graduate program in emergency management for working professionals. GWU was already catering to a professional market, Shaw said, by offering evening classes. A couple of pilot courses in emergency management were developed and promoted within the university; attendance was acceptable, so the proposal for a degree was developed and approved within weeks. The speed of development, Shaw explained, was reflective of GWU being a private university. While the disciplinary backgrounds of faculty who came together to develop emergency management programming included psychology, medicine, and engineering management, the program quickly became focused and has remained within the School of Engineering and Department of Engineering Management and Systems Engineering. Program offerings, as described on the GWU (n.d.-a) website and as confirmed by Shaw (GS-I1), now include a concentration in Crisis, Emergency and Risk Management in the MSc and PhD in

Shaw spoke about the unique characteristics of programming at GWU. He stated, “We’re probably the only program in the United States that’s really situated in an engineering school that has to do with emergency management and homeland security” (GS-I1). Shaw went on to explain the institution’s particular approach to framing emergency management as a field of study:

We’ve always held the position that emergency management is first and foremost a management science, and that we would rather graduate people who are good managers and understand long-term budgeting, consensus-building, all those types of skills, rather than have specific technical information in some of the areas of emergency management. (GS-I1)

These characteristics are reflected in the structure of the GWU MSc program, which requires students take four core Engineering Management and Systems Engineering courses, four core Crisis, Emergency and Risk Management courses, and four electives (GSU, n.d.-a). Additionally, Shaw said a characteristic of faculty teaching in the Crisis, Risk, and Emergency Management courses at GWU is they all have professional experience in emergency management. Shaw believes it is essential that people teaching in the emergency management field have professional experience.

Most of the students enrolled in the MSc program are working full time, with many already employed in the emergency management sector (GS-I1). To gain admission to the program, applicants need to have an undergraduate degree as well as some prior work
experience, although not necessarily in emergency management. Students who do not have the requisite math skills for the engineering courses are required to take a “remedial calculus course” (GS-II) that was designed to ensure students have the requisite skills for study in the program.

**Case-based learning activities.** Shaw expressed three main reasons why he used cases in his teaching (GS-II). One of his reasons for using cases was they help students to integrate and apply what they have learned in their program to date by developing a best approach to dealing with a problem. Another reason he used cases was they supported the development of competencies related to how professionals work (e.g., leadership, decision making, presentation skills). The need to actively engage students in the learning process was the third motive for the use of case-based learning activities; this need was influenced by Shaw’s own experiences as a student, his teaching experience, and his formal knowledge of how students learn (GS-II). As Shaw explained, “The principles of adult education call for the involvement of students, and I think cases very much do involve students” (GS-II). Thus, Shaw’s reasons for why he uses cases in his teaching are based on his knowledge of the specific affordances of problem-based case activities and how they support the learning process, as well as his knowledge of how students learn.

Shaw provided six different examples of how he used cases in his teaching; all examples were from a course called *Disaster Recovery and Organizational Continuity* (GS-CS1); this is an elective course that students can take toward the end of their program of study. Shaw stated he uses cases as much as possible in teaching this course (GS-II). He

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9 Shaw refers to this course as the Business Continuity course in his discussions, and I will use that term when referencing this course.
defined a case as a situation an organization has faced or is facing (GS-I1). All of Shaw’s approaches to the use of cases in his teaching were variants of the functional use of cases as problems to solve.

**Characteristics of Shaw’s objects.** The objects of Shaw’s case-based learning activities were all found to focus on the need to develop students’ professional competencies in collaboratively working with others to solve different types of professional practice problems. I noted two dimensions of competency development. The first dimension was a focus on what professional do, which is solving professional practice problems. The characteristics of emergency management problems had a further influence on objects of the case activities. As Shaw explained, “There’s a multitude of different parts” (GS-I1) to a crisis or emergency management problem, and “there probably aren’t necessarily right or wrong answers” (GS-I1). What students need to do, Shaw stated, is to develop “a best approach” (GS-I1) to solving a problem. Case activities “generate a lot of really original and creative thinking” (GS-I1). Given that there can be more than one approach for dealing with a problem, another dimension to the object of Shaw’s case activities was for students to compare and critique alternative options for solving a particular problem. This dimension of the activity supported development of students’ knowledge about alternative options and as well as understanding of the common characteristics of an effective response. The second dimension of the objects was a focus on how professionals work. In his approach to the use of cases, Shaw’s activity designs supported development of team skills, such as leading a group and developing consensus, as well as other professional competencies, such as briefing on proposed strategies for addressing the problem (GS-I1). These two dimensions of the objects reflect the need to develop students’ knowledge of professional practice. Case
activities, as Shaw stated, are a mechanism by which students are able to put knowledge gained through prior learning activities into practice (GS-I1).

The primary difference between the objects in Shaw’s case-based learning activities was the type of problem for students to solve. Three cases all focused on different types of response problems, while the two cases focused on a preparedness planning problems. One case integrated components of preparedness and response activities. The object of the Hindcasting case was different, as the problem was not the primary object of the activity; rather, it was a tool for learning and using a Hindcasting method (GS-CM1). Hence, the Hindcasting case focused on the need to develop students’ knowledge about a particular method that could be used in professional practice, as well as knowledge of its application. The types of problems in the case activates were bounded by the focus of the course, which was reflected in the title – Disaster Recovery and Organizational Continuity. A characteristic of the objects of Shaw’s case activities, regardless of whether they were focused on planning or response, is that they all had an implicit focus on the value of preparedness; this aligns with his stated view of an emergency manager’s role as being focused on protection needs.

**Characteristics of Shaw’s cases and case tools.** The criterion for Shaw’s selection of cases and selection of case tools was conjoined. The implicit criterion for case selection was that it needed to link to a course or topic; the object delimited the specific phenomena that the case needed to be an example of. All of the cases Shaw selected represent different types of crisis management or business continuity situations faced by public or private sector organizations. A stated criterion for selecting case tools was they needed to provide students with a “realistic” (GS-I1) example of a crisis or emergency management situation. Case scenarios, Shaw explained, must not have any mistakes because students “get very much
distracted by the errors in the scenario rather than actually moving forward and learning something from it” (GS-I1). He added that he was not looking for cases that gave students answers; rather, he was looking for cases or the part of a case that presented the problem (GS-I1). However, the findings from the analysis of case materials selected reflected four of the six cases did include information about how experts solved the problem. While the availability of experts’ responses to the problems was not a stated criterion for case selection, it was nonetheless an affordance of the cases selected and the expert perspectives presented in the case tools were used in different ways in Shaw’s case activity designs. In this regard, the availability of expert perspectives about how to handle problems within a case can be considered an enabling rather than necessary criterion. The availability of tools that met the two necessary criteria of linking to the course and topic and being a realistic example of a problem were found to influence which cases Shaw selected.

Shaw selected both actual and hypothetical cases. Two of the three response scenarios were of actual responses (LaSalle Bank and Coast Guard), while the third (Media Policy) was a hypothetical case that was derived from a real experience (Sonnenfeld, 1994). The LaSalle Bank fire and Coast Guard cases were exemplar cases. Shaw noted the LaSalle Bank did “as good a job as anybody ever has of restoring their business almost immediately” (GS-I1) following a major fire in their Chicago high-rise headquarters building. In addition to being an exemplar case, Shaw also had a personal connection to Coast Guard case. Two of his friends lost their lives on a Coast Guard cutter that sank, and he was on one of the rescue ships involved in the response (GS-I2). The Coast Guard case also included a description of a second incident in which a vessel collided with a bridge, causing the bridge to collapse; 35 people perished in this second event after their vehicles went into the water (GS-I2). Given
his connection to Coast Guard case, Shaw was able to provide a personal perspective about the operations and the commander (GS-I1; GS-I2). The Media Policy case (Sonnenfeld, 1994) dealt with a crisis communication situation faced by a private sector organization that had just learned that one of its regional offices had given funds to an umbrella organization, which in turn gave funds to a pro-life group that claimed responsibility for a bombing at an abortion clinic. While this case was derived from real experience, as written, it was hypothetical (Sonnenfeld, 1994).

The tools for presentation of response cases all came from journal articles. The Media Policy case tool (Sonnenfeld, 1994) was a *Harvard Business Review* article. While presented as a hypothetical case, the article included responses from five experts who explained how they would handle the event. The LaSalle Bank fire case tool was an article in the *Journal of Business Continuity and Emergency Planning* by Jack Smith (2006), who was the Business Continuity and Crisis Manager for the La Salle Bank at the time of the fire. There were two articles for the Coast Guard case. An article in the *Commandant’s Bulletin* presented Gilbert’s (1982) analysis, as the operational commander, of what to do and what not to do managing a crisis situation. To complement this perspective, Shaw also has students read second article in the *Harvard Business Review*, in which Augustine (1995) framed six stages of crisis management. Hence, the response cases all afforded the opportunity for Shaw to integrate the use of expert points of view into the case activity designs. A characteristic of the tools selected for the response cases is that they all provided a narrative account about the event.

In contrast to the response cases, two of the three preparedness cases were hypothetical and the sources of case tools differed. Lawnjeray® was a copyrighted case,
produced by Attainium, a business continuity consulting company. The case material provided background information on a lawn and garden consumer product company and lays out the roles to be undertaken by participants during the activity. The Hindcasting case was constructed by Shaw, and presents a fictitious newspaper account of a university’s response to major fire in a catastrophic dormitory on campus that killed 37 students (GS-I2; GS-CM1). The Hindcasting case materials also include a PPT developed by Shaw to explain the Hindcasting method (GS-CM1), which was introduced to Shaw by another faculty member at George Washington University (GS-I2). Shaw found the Pandemic case by doing a web search for “pandemic planning” and selected it because the pandemic was a worldwide topical issue (GS-I1). The case was one of 10 included in a report entitled *Business Continuity Planning: Responding to an Influenza Pandemic* (Department of Enterprise, Trade and Employment, Enterprise Ireland, Forfás, & IDA Ireland, 2009) published in 2009 by a consortia of government and private sector partners to help raise the awareness among businesses in Ireland of the need for and importance of business continuity planning in advance of a flu pandemic. The case material provided a description of a real computer printing services subsupply company; however, certain details were fictionalized to protect the identity of the company (Department of Enterprise, Trade and Employment et al., 2009). A common characteristic of the preparedness planning cases was they had all been constructed, even though one was based the experiences of a real organization (Department of Enterprise, Trade and Employment et al., 2009).

**Characteristics of Shaw’s case-based learning activity designs.** All of Shaw’s case-based learning designs, with the exception of the Hindcasting case, appeared to share a
similar structure. I found the common sequence of actions and goals in his case-based activities to be as follows:

• The instructor provided students with background information about a case.
• Students analyzed the situation and problems that were present in the case.
• Students proposed an approach to solving the problem, drawing from their prior learning in the course or program to date. When teams presented their approach to handling the case, the instructor provided rules, giving them “a set amount of time and format for presenting information” (GS-I1), which reflects a type of competency needed by professionals.
• Students compared and critiqued alternative responses.

The variations between the designs were as follows:

• With the Coast Guard case Shaw verbally presented the situation; whereas, with all other cases the situation an organization was facing, or had faced, was presented in the various case materials.
• In the Media Policy, Coast Guard, Pandemic, and Lawnjeary® cases students worked in teams as they analyzed the case; the Hindcasting case included individual analysis of the problem and class discussion, but no teamwork.
• The Lawnjeray® case focused on comparison and critique of student team solutions, while in the Media Policy, Pandemic, and Coast Guard cases included comparison with and critique of student responses as well as the expert perspectives as presented in the case tools (GS-I2).
The order of the last two actions was reversed in the LaSalle case. Students first *critiqued* the actual response, and then *proposed* alternative actions to enhance the positive aspects and mitigate against the negative outcomes of the event (GS-I2).

The Lawnjeray® case had an additional component to the activity, which was an exercise scenario, which allowed students to *test* the efficacy of their plans.

The variations in the case activity structure were found to reflect (a) the affordances and constraints of the case tools (e.g., availability of expert perspective, as in the Media Policy Case; prescription of different roles in case, as in the Lawnjeray® case) and (b) Shaw’s design decisions (e.g., use of teams).

The Hindcasting case had a different object and structure (GS-I2; GS-CM1). In this activity students learned about the Hindcasting method by applying it themselves. This method requires the use of a case as a tool. The function of the case is still a problem to solve; however, the Hindcasting method provided a specific process for problem analysis.

During the first part of the learning activity, students *read* the case, and *analyzed* what kinds of failures led to an event and its consequences, and well as to the organization’s poor response to the event. During the second part students *analyzed* why the problems and failures occurred. The instructor then *created* an influence diagram showing the reasoning for the failures and the interrelationship between different variables that influenced the outcomes. Students *reframed* the negative outcomes into positive outcomes and identified critical success factors that would have prevented the problem and mitigated against its outcomes. Shaw said the purpose for using the Hindcasting method was to support business teams in valuing preparedness and identifying their own critical success factors (GS-I2). The Hindcasting tool was an example of how case tools influence the structure of case activities.
In conclusion, a characteristic of Shaw’s case-based learning designs was they were highly structured activities. The variations between his six different approaches to the design of case-based learning activities were found to be influenced by (a) the object, specifically the type or problem to be solved (e.g., response, preparedness planning); (b) the functional approach to the use of cases as problems to solve; (c) the specific affordances and constraints of cases and case tools; and (d) Shaw’s own design decisions. The findings from analysis of Shaw’s different approaches to the use of case-based learning suggest the relationship between an object, the tools, and activity design is dynamic. While objects delimit case and tool selection, the availability of case tools influences which cases are selected, and the affordances of case tools influences the possibilities for an activity design.

**Cultural-historic influences on Shaw’s case-based learning activity designs.** This section will describe the ways in the faculty member, institution, disciplines, and profession were found to influence the characteristics of the objects, tools, and activity designs in Shaw’s case-based learning activities. Examples of historical factors influencing these characteristics are also offered.

**Influences on the characteristics of the objects.** The objects of Shaw’s case activities reflected his interpretation of students’ learning needs relative to the learning outcomes for the *Disaster Recovery and Organizational Continuity* course. The academic subject matter for this course aligned with Shaw’s expertise, which was informed by both his diverse educational experiences as well as his professional experience with the Coast Guard. The objects also reflected GWU’s view of emergency management as a management science and as a professionally oriented and applied field of study. An additional institutional influence on the objects of Shaw’s case activities was the placement of the course as an elective later in
the curriculum. An effect of this was students were able to integrate and apply knowledge developed through prior courses.

The objects of Shaw’s case-based activities focused on different dimensions of what professionals do and how they work, including the types of problems that professionals are expected to be able to solve (e.g., preparedness, crisis communication) and the orientation towards the problem (e.g., strategic vs. tactical perspective; value of mitigating risk and culture of preparedness). The objects of the case activities also included a focus on evaluating alternative options for dealing with problems; this reflects that the nature of professional practice problems is that they do not have one right answer, but there are best approaches.

**Influences on the characteristics of tools.** Shaw’s understanding of how cases support student learning influenced his criteria for the selection of cases and case tools (e.g., the need for realistic examples and the need to be a relevant professional practice problem) and his use of case tools (e.g., the need to initially present the problem, rather than solution and the need to examine expert practice). Shaw’s case examples were all private and public sector cases. Shaw’s personal experience with the Coast Guard case was a motive for using that case in one of the learning activities. The country context (i.e., US) of the institution was the setting for all cases, except the pandemic case. This reflects the demographic market for the MSc program (private, public or nonprofit sectors), as stated on the GWU (n.d.-a) website.

Case tools included articles from business and emergency management journals (LaSalle, Media Policy, Coast Guard). The Media Policy case was an example of a typical business case. The cases selected were examples of different professional problems, and
expert approaches to dealing with problems were affordances of certain case tools. The Pandemic case focused on a global issue that was a current concern of professionals at the time. The Lawnjeary® and Pandemic cases reflect the use of commercially produced cases for study; the use of these constructed cases was not limited to a graduate academic setting. The Hindcasting method had been introduced to Shaw by another faculty member at GWU.

**Influences on the characteristics of activity designs.** All of Shaw’s learning activity designs had a well-structured sequence of actions and goals. This design characteristic reflected Shaw’s own disciplinary orientation and scholarship, as well as his view of the characteristics of expert practice. The activity designs were also reflective of Shaw’s and GWU’s views of DEM as a management science. The Lawnjeray® case included the use of an exercise design, which is a current practice applied in the emergency management field for testing preparedness plans and developing professional competencies.

Shaw’s understanding of characteristics of professional emergency management problems (i.e., ill structured with no one right answer) and the characteristic of professional activity (e.g., collaborative problem solving, systems thinking, making defensible recommendations) were reflected in the sequence of actions and goals that comprised the case activities and in the division of labour. The division of labour in Shaw’s case activities also reflected his stated pedagogical philosophy (e.g., actively engage students in the learning process), which was influenced by his own experiences as a student, as well as his attention to needs of students at GWU (e.g., at night to students who have been working all day). Rules for the case activities (e.g., time limit for presentations) reflected Shaw’s attention to developing students’ competencies with regard to other dimensions of how professionals work.
**Uniqueness of Shaw’s case relative to others in this study.** Of all of the faculty members participating in this study, Shaw’s approach to the use of cases in his teaching was most aligned with the construct of signature pedagogies. The objects of Shaw’s case-based learning activities focused on development of professional competencies, rather than development of knowledge about the academic subject matter for the course. Shaw’s case activities addressed all three dimensions of professional work (acting with integrity, thinking, and performing). Additionally, Shaw’s case activities all entailed public student performance with accountability to the faculty member and peers (e.g., presenting, defending and critiquing alternative strategies), and dealt with conditions of uncertainty (e.g., no one right answer). Further, the repeated use of problem-based cases, and use of alternative and expert perspectives on how to address the problems within a given case supported the student’s ability to deal with complexity. There were also unique attributes of GWU as an institution. These were the situation of emergency management programming within the engineering school and the attendant view that emergency management is a management science, which was reflected in the inclusion of a business continuity course in the curriculum.

**Summary**

In keeping with the conventions for case-based research, in a multicase study, each case is considered to be a separate case study (Yin, 2014). This chapter presented the findings from the analysis of (a) how and why each faculty member used cases in his or her teaching, and (b) the cultural-historic factors that influenced the characteristics of each faculty member’s case-based learning activity designs. The use of a standardized template for description of the findings from the analysis supported the readers’ and my ability, as the researcher, to make cross-case comparisons. Chapter 5 will present the patterns in the
findings about how and why faculty members used cases in their teaching, and Chapter 6 will present the patterns in the findings about the cultural-historic influences on the characteristics of faculty members’ case-based learning activity designs.
Chapter 5: Why and How Faculty Members Use Cases in Their Teaching

This chapter presents the results of the cross-case analysis of findings about why and how the seven faculty members participating in this study used cases in their teaching in DEM higher-education programs. The analytic strategy for the cross-case analysis, while following qualitative conventions of analyzing data from the ground up, was framed by the propositions inherent in activity theory, which provided the overarching theoretical framework for this study. This methodological approach supported the development of activity-theory-based explanations about how cases support learning, which had appeared as a gap in the literature. The patterns in the findings were also interpreted in relation to the literature on case-based research methods. While literature base on case-based research (e.g., Stake, 1995; Yin, 2014) and case-based learning and teaching (e.g., Jonassen, 2011; Lynn, 1999; Shulman, 1992) each make reference to the other, the deeper theoretical relationship between these two different functional approaches to the use of cases is not well developed and made explicit in the literature. Thus, another gap in the literature and contribution of this study is an interpretation of the theoretical linkage between case-based research methods and case-based pedagogy. In the discussion section of this chapter, the patterns in the findings are further interpreted in relation to established signature practices for the use of cases in the fields of law, business, and medicine, as well as in relation to existing typologies for classifying case- and problem-based learning activities. This discussion serves to further situate the findings from this study in relation to existing practice, and well as methods of conceptualizing practice. This chapter concludes by offering an answer to the question about why and how cases are used by faculty members who are teaching in DEM postsecondary programs.
Why Faculty Members Use Cases in Their Teaching

Faculty members’ reasons for using cases in their teaching were explicitly stated in the interviews and implicitly reflected in their case-based learning activity designs. Their explanations about why they used cases were framed in relation to their experience with using cases rather than in relation to formal knowledge about the use of cases. While each individual participant in this research study had his or her own particular reasons for using cases, I found patterns across participants’ reasoning. These patterns were interpreted and framed in relation to activity theory, which served as the orienting theory for this study, as well as the literature on case-based research. This integrated approach to the use of emic and etic perspectives for explaining why faculty members use cases provides a theoretically grounded interpretation of their reasoning for the use of cases; this is a necessary input into the development of theoretically grounded instructional design guidance for the use of cases in teaching in DEM postsecondary programs.

The first conceptual frame for interpreting and describing why faculty members use cases in their teaching draws from the case-based research literature. Faculty members’ reasoning for the use of cases was for their instrumental as well as their intrinsic value (Stake, 1995, 2005). As Stake (1995) explained, the function of an instrumental case study in research is to give insight into a more general understanding of something else. At other times, there is a need to learn about a particular case; this type of research case is referred to as an intrinsic case study (Stake, 1995, p. 3). Stake (1995, 2005) described a third type of case, which is a multiple or collective case study. He explained that collective case study “is instrumental study extended to several cases” (Stake, 2005, p. 446). Stake’s definitions of instrumental and collective case study are inherently the same, with the difference being the
number of cases. This suggests that from a functional perspective, there are two, rather than three, primary types of research cases, and a particular characteristic of instrumental case study as a research method is that it can be either a single or multiple case study. Faculty members’ reasoning for the use of cases in learning activities was for their intrinsic and instrumental value.

The distinction between the intrinsic and instrumental function of cases can also be explained from an activity theory perspective. From this perspective, objects distinguish activities, thus differences in the patterns in faculty members’ reasoning for the use of cases can be explained by differences in the objects of their case-based learning activities. Faculty members’ reasoning for the use of cases in their teaching included the need to develop students’ knowledge about a particular case; this is the use of a case for its intrinsic value. In these instances a case was the object of a learning activity. In contrast, when the reasoning for the use of cases was based on the need to develop students’ knowledge about something else, the function of the case was as a tool. There were further differences in faculty members’ reasons for the instrumental use of cases as tools, with the distinctions being the type of knowledge development that was the object of case activities. As discussed in the introduction to Chapter 4, Scardamalia and Bereiter’s (2006) frame for distinguishing between types of knowledge was found to be of value in differentiating between the two reasons for using cases for their instrumental value, which were to (a) develop students’ knowledge about something and (b) develop their knowledge of how to do something. The distinctions between these two different instrumental reasons for the use of cases can be further explained by propositions inherent within activity theory, which I discuss later in this section.
The model in Figure 4 illustrates the primary reasons why faculty members used cases in their teaching. The next sections in this chapter expand on faculty members’ particular reasons for using cases for their instrumental and intrinsic value, and discuss these reasons from an activity theory perspective.

![Diagram of functional reasons for using cases in teaching]

**Figure 4.** Functional reasons for using cases in DEM higher education programs.

**Instrumental reasons for using cases.** Faculty members’ reasons for the instrumental use of cases were related to three specific elements in a learning activity system:

- the intended learning outcomes, as reflected in the objects of the case-based learning activities;
- the needs of students, as subjects in learning activities; and
- the internal and external effects of cases as signs and tools.

In addition to these different categories of reasons for using cases, I found patterns in the interrelationship between these different reasons. Faculty members’ explicit reasons for the use of cases as they pertain to objects and outcomes, subjects, and signs and tools are discussed in the subsections that follow.

**Objects and outcomes of case-based activities.** From a theoretical perspective, the objects of case-based learning activities reflected faculty members’ assessment of students’ starting points and learning needs relative to the expected learning outcomes for a course.
The learning outcomes for courses, which were loosely or tightly defined in course syllabi, reflected faculty members’ delegated agency and role in interpreting and realizing the collective motives of the DEM program of study at a particular institution. The objects of case-based learning activities were rarely summarized in written form, and in most instances were inferred from faculty members’ descriptions about their use of cases and the analysis of associated case materials. Through cross-case analysis of the objects of the case-based learning activities, I identified patterns in the characteristics of objects. As previously described, the two instrumental reasons why faculty used cases, based on the objects of case-based learning activities, were to develop and assess students’ knowledge about something and knowledge of how to do something. Within these two main categories, further subcategories of types of knowledge development were reflected in the objects of the case-based learning activities. These subcategories of types of knowledge are further discussed in the section on how faculty used cases in their teaching. Faculty members’ reasoning for the use of cases as tools was also based on students’ starting points and learning needs, which are relative to the object of a learning activity.

**Students’ starting points and learning needs.** There were three subcategories of reasons why faculty members used cases that related to their understanding of students’ learning needs and starting points. These reasons reflected faculty members’ expressed beliefs about students’

- ways of knowing,
- ways of learning, and
- experience as a condition for the use of cases.
With regard to students’ ways of knowing, Etkin and Waugh said theory did not have meaning for students unless it was connected to real-life examples (DE-I1; WW-I1). Furthermore, Phillips said when you ask students “about something in their own lives” (BP-I1), they reference it in relation to a specific experience they have had. She suggested this way of thinking makes them “case-study oriented” (BP-I1). Thus, one of the motives for the use of cases was the need to provide students with an experiential means of understanding abstract ideas; this is an intrapsychological reason for using cases. In contrast, Shaw said one of his reasons for using cases was the need to actively engage students in the learning process and noted this was affirmed in adult learning principles (GS-I1). Shaw’s reasoning reflected the activity theory proposition that learning occurs through activity.

Faculty members also spoke about conditions for using cases in teaching. Etkin explained cases are helpful when students lack experience related to the phenomenon that is the object of study; conversely, when students have related experience, cases are not needed because students can make cognitive associations between theory and their own experience (DE-I1). Similarly, Phillips stated cases were helpful when students were new to the field (BP-I1). Phillips also suggested a condition for using cases was the difference between students’ starting points within a class. The use of cases, she said, was a means of “uniting” (BP-I1) students within a classroom and creating a “really level playing ground” (BP-I1) in which “everybody had to learn the same material” (BP-I1). This condition reflected (a) students come to class with different experiences and hence different starting points, (b) the collective nature of formal learning activities, and (c) the understanding that learning is a socially mediated activity. Thus, students’ ways of knowing and learning were needs that became motives for the instrumental use of cases, and students’ starting points and
differences between their starting points relative to the object were conditions for the use of cases. Faculty members’ beliefs about how students know and learn were associated with their beliefs about the effects of cases in a learning activity.

**The effects of cases in mediating activity.** In their discussion about types of agents and forms of agency, Kaptelinin and Nardi (2009) suggested that while natural things (e.g., tornado) and cultural things made by people (e.g., levees) have “conditional agency” (p. 244) and “produce effects” (p. 244), cultural artifacts also reflect “delegated agency” (p. 244) and thus “realize the intentions of (other) human beings” (p. 244). In this regard, faculty members’ beliefs about the conditional effects of cases as tools were related to their intentions or their beliefs about the intentions of others, rather than to the conditional effects of the material dimensions of case tools. Faculty members’ beliefs about the conditional effects of cases in mediating students’ learning differed based on whether their intention was to develop students’ knowledge about something or knowledge of how to do something. Further, in keeping with propositions inherent in activity theory, faculty members’ beliefs about the effects of cases in learning activities reflected there were both functional and development effects (Kaptelinin & Nardi, 2009). The functional effects related to the process by which cases supported learning, whereas the developmental effects related to the outcome of case-based learning activities.

While an initial proposition for this study was that cases were tools, the findings of this study suggest, within a learning activity, the function of cases is as a psychological tool or sign (these two terms are used interchangeably in activity theory literature). The reason why faculty members used cases related to the intrapsychological effects of cases as signs was because cases bring concepts to life for students. This effect of cases was relative to
faculty members’ intentions to develop students’ knowledge about something. For example, McEntire said a case “bring(s) the topic or concept to life and they [students] can see it … firsthand and know concretely what you are talking about” (DM-I2). Waugh said cases “give life to more abstract ideas” (WW-I1), thus enabling students to “connect reality and theory” (WW-I1). Waugh also said cases bring statistics about the consequences of disasters to life in a way that helps students to understand the impact in a different way. Etkin stated cases bring theory “to life” (DE-I1) for students in a way that engages them affectively as well as cognitively. Faculty members’ beliefs that cases bring abstract concepts to life for students suggest that the instrumental function and effect of cases as signs is two-dimensional. Cases have both an associative (e.g., an example of a concept, theory, or principle) and a generative (bring-to-life) function, regardless of the form of a case (e.g., verbal, visual, or text). Faculty members’ reasons for using cases to develop students’ knowledge of how to do something were different.

Faculty members’ beliefs about the effects of cases in developing students’ knowledge of how to do something related to the intra- and interpsychological effects, as well as the behavioural effects of cases as tools. These beliefs reflected activity theory propositions about the interrelationship between the internal and external dimensions of activity. Faculty members’ reasons to develop students’ knowledge of how to do something were because cases

- simulate real activity and
- engage students in collaborative activity.

Faculty members’ beliefs about the effects of cases in simulating real activities reflected the interrelationship between the external behavioural dimensions of case-based
activities (the need to demonstrate how to do something) and the intrapsychological internal dimensions of activity (the need to integrate, synthesize, and apply knowledge in the generation of a creative approach to dealing with the scenario presented in the case). Shaw’s reasoning for using cases was because of their effects in simulating professional activity (GS-I1). This functional effect was related to the use of a case as a situated problem to solve. The problem was the motive for students’ engagement in a simulated activity, which required them to develop an approach for dealing with the problem, present and defend their proposed solution, and critique alternative perspectives. All of Shaw’s case activities were some form of a simulation, which reflected his particular interpretation and beliefs about the functional use of cases in his teaching. Similarly, Jensen’s reasoning for using a live case in her Vulnerability and Functional Needs course was for its effect in simulating the type of professional activity that students were expected to be able to engage in as they worked with organizations serving populations with functional needs (JJ-I2). Her use of a live case gave students the opportunity to make cold calls to organizations, interview people working with special populations, and analyze and evaluate organizational preparedness to respond to a disaster, and then make recommendations to improve preparedness. While the cases in this particular learning activity were real, the activity itself was a simulation.

Faculty members’ reasoning about the effects of cases in simulating professional activity reflected that, at a graduate level, students also needed to develop research competencies. For example, Kushma’s reasoning for using cases as tools was for their effects in developing and assessing students’ knowledge of research methods. She said research is a “thinking process” (JK-I2) and “reading about it … is not as good as doing it” (JK-I2). Kushma also stated students who had not previously been exposed to evaluation research
struggled to understand the concepts, but that when they had to think their way through how to do an evaluation research activity, “the light bulbs started going on” (JK-I2). Kushma also used cases to assess students’ knowledge of research methods, and said her reasoning for this was “students have an easier time applying concepts if they have something real to apply it to” (JK-I2) and they applied their knowledge “in a more creative way than simply answering questions on an exam” (JK-I2). Kushma’s belief suggests that assessment of knowledge of something is qualitatively different from the assessment of students’ knowledge about something. Similar to Shaw, all of Kushma’s case activities were simulations, which reflected her particular beliefs about how students learn, as well how cases support learning.

The second category of reasons why faculty members used cases to develop students’ knowledge of how to do something was because of the interpsychological effect of engaging students in collaborative activities. Kushma reported one of her reasons for using cases was they gave students the “experience collaborating with others solving problems … under time pressure” (JK-I1), thus simulating the kind of experience students would have when working with others on disaster operations. Similarly, one of Shaw’s reasons for using a case activity was that such activities required students to “develop a consensus” (GS-I1) on how to best address the problem, as well as to present, defend, and compare teams’ approaches to dealing with problems. He noted that these were professional skills that were important for students to learn. Jensen also talked about how her use of a live case required that students learn to engage with external stakeholders in the manner expected in professional practice (JK-I2). Thus, one of faculty members’ reasons for using cases was because the interpsychological effect of engaging students in collaborative activity supported development of the type of interpersonal competencies needed by DEM professionals. The belief that there are both
behavioural and interpersonal dimensions to human forms of activity is a foundational aspect of sociocultural learning theory (Vygotsky, 1978). While other faculty members noted the need to actively engage students was a part of their teaching philosophy, their beliefs about this need related to their general pedagogical knowledge about learning and teaching, rather than the need to develop specific types of professional competencies. The functional effects of the use of cases to develop students’ knowledge about and knowledge of how to do something were believed to have specific developmental effects.

There appear to be two reasons why faculty members used cases that were associated with developmental effects:

• cases support development of a deeper level of understanding about things and
• cases support remembering and future use of knowledge.

Faculty members believed the use of cases led to students having a deeper level of understanding and thus knowledge about something. For example, Etkin said when case examples are used to illustrate a particular theory, students “really understand it at a much deeper level” (DE-I1). Similarly, Jensen said students’ application or evaluation of what they have learned against a case helped them “to achieve a deeper level of understanding of the phenomenon under study” (JJ-I1). In addition, Phillips said one of her reasons for using cases was they gave students an “in-depth” (BP-I1) understanding about things. For example, she said, by digging into a case, students could “see what people think really happened to cause” (BP-I1) disaster events. With reference to the Haiti earthquake, she said that while students had all read and seen stories about the earthquake in Haiti, they “they hadn’t dug into it the way that we did” (BP-I1). The case activity required that students look at new things and look at things in a new way (e.g., how the history of development in Haiti led to the death
and destruction following the earthquake in Haiti; BP-I1). Faculty members’ reasoning suggests that having a deeper level of understanding about something is related to having both conceptual and experiential forms of knowledge about something.

Faculty members also believed that case-based knowledge, as a particular form of knowledge, supported students’ remembering and subsequent use of knowledge associated with the case. Etkin said that case knowledge “sticks a lot better” (DE-I1) and that when students “see how it actually applies in a particular situation … they’re more likely to be able to use it in the future” (DE-I1). Similarly, Kushma said, in her experience, students “remember those cases they have studied” (JK-I1) and they would bring them up in subsequent classes (JK-I1). She went on to say this suggests “there’s a certain kind of learning with cases that allows students to be able to retrieve that knowledge” (JK-I1). Furthermore, McEntire said, “My goal, whether it happens or not I don’t know” (DM-I2), was that students “could be confronted with a disaster” and would be able to remember a case from a particular class, and remember what worked or did not work in the case” (DM-I2). Faculty members’ beliefs about the development effects of cases suggest remembering, and thus future use of knowledge, is associated with situated ways of knowing about something.

**Discussion about the effects of cases as tools.** This discussion further situates faculty members’ beliefs about the functional effects of cases as psychological tools in relation to (a) activity theory, (b) the literature on case-based research, and (c) the literature on problem-based variants of case-based learning. As previously discussed, faculty members’ beliefs about the effects of cases as tools were conditional and relative to their intentions, rather than
to any effects that might be inherent in a particular tool (e.g., a speed bump can slow cars, or be used to practise skateboard jumps).

While faculty members’ beliefs about the functional effect of cases in bringing abstract concepts to life for students were grounded by the lived experience of faculty members, these beliefs were also reflected in activity theory propositions, as established by Leont’ev (1977) in his explanation of the process of internalization of external activity in his writing about the relationship between activity and consciousness. Leont’ev (1977) posited that meaning is always associated with reference to the world. He explained, “Consciousness only exists in the form of a mental image revealing the surrounding world to the subject” (Leont’ev, 1977, p. 170). Leont’ev (1977) qualified that a mental image is a “sensuous image” (p. 173) and that “sensuous images are a universal form of mental reflection generated by the objective activity of the subject” (p. 173). He went on to explain that, in humans, “sensuous images acquire a new quality, namely, their meaning or value” (Leont’ev, 1977, p. 173), and thus “meanings refract the world in man’s consciousness” (p. 173). Leont’ev (1977) added, while meanings always retain their initial objective reference, meanings in the consciousness of the individual are at the same time individual and personal, and thus “meanings lead a double life” (p. 175). Personal meaning, Leont’ev (1977) asserted, is associated with an individual’s own experience and existence in the world. He cited the example of how a grade for an assignment, while having an objective meaning, can also have a personal meaning (Leont’ev, 1977). Students’ personal motives were a factor that influenced some faculty members’ selection of cases as tools.

One of the functions of a case in learning activities is as proxy for actual activity. The function of a case as a proxy was also reflected in propositions within activity theory.
Leont’ev (1977) qualified the “sensuous composition of the specific image of reality” (p. 171) could be “actually perceived or arising in memory, referred to the future or perhaps only imaged” (p. 171). He further explained,

> While in their abstractness, in their ‘supra-individuality,’ meanings are indifferent to the forms of sensuousness in which the world is revealed to the specific individual … their functioning in the subject’s realization of actual relationships in life necessarily presupposes their reference to sensuous influences, (Leont’ev, 1977, p. 176).

Leont’ev’s (1977) assertion the function of the sensuous image is the same regardless of its form is reflected in the diversity of types of cases and case tools used by faculty members. However, faculty members did have beliefs about how different qualities of cases (e.g., Phillips’s use of current cases) or case tools (e.g., Waugh’s use of visual images; Etkin’s attention to the affective dimensions of cases) played a role in mediating students’ learning. These kinds of beliefs were reflected in their enabling criteria for the selection of both cases and case tools.

The theoretical foundations for the use of cases to develop students’ knowledge about something can also be understood from a case-based research perspective. As previously discussed, the value of an instrumental research case is that it gives an insight into something (Stake, 1995, 2005). The use of established case-based research methods for making meaning from cases is particularly relevant in postsecondary programs of study because many of the objects of learning activities focused on developing students’ knowledge about what is empirically known about something. For example, Phillips wanted to develop students’ knowledge about what is empirically known about the psychological impacts of disasters and how people recover from these impacts. From a cultural-historic perspective, universities
continue to privilege empirical knowledge. Established research methods (e.g., Merriam, 1998; Stake, 1995, 2005, 2006; Yin, 2014) provide guidance about the method of constructing meaning from single and multiple cases. For example, Stake (1995) talked about the affordances and constraints of constructing meaning from single case. He stated, “Single cases are not as strong a base for generalizing to a population of cases as other research designs. But people can learn much that is general from single cases” (Stake, 1995, p. 85). Stake (1995) went on to add that the mechanism for doing this was that a single case provides an opportunity to modify old generalizations through the use of a new experiential reference. Similarly, Yin (2014) suggested one of the reasons for using a single case was because it is a common case. Yin (2014) explained a reason for using a common case is “because of the lessons it might provide about the social processes related to some theoretical interest” (p. 52). In this regard, single cases always have a theoretical relationship to something, and case-based research methods establish the method of meaning making from cases.

In contrast to the instrumental use of cases, faculty members’ beliefs about the reasoning for using cases to develop students’ knowledge of, and thus ability to do, something was related to the intra- and interpsychological, as well as the behavioural effects of cases as tools. The need to develop students’ knowledge of how to do something, from an activity theory perspective, results in the “internalization of socially rooted and historically developed activities” (Vygotsky, 1978, p. 57). The method for developing students’ knowledge of how to do something was through their engagement in simulated activities. The problem presented to students functioned as a need that became a motive for an activity, and solving the problem became the object of the activity. While problems in case-based
learning activities are situated in the world, students’ experiences of the problem come through the their individual constructions of a sensuous image and meaning about the problem, in which they see themselves as being situated in relation to the problem in the world (Leont’ev, 1977). Through the activity of individually or collectively engaging with the image of the problem, personal and collective meaning is ascribed to the problem, and goals for dealing with the problem are formulated and acted on. The action may be physical or psychological. As the experience in dealing with a problem is internalized, meaning about the experience is refracted, and this becomes knowledge of how to do something.

Faculty members’ beliefs about the developmental effects of cases in supporting remembering also had a foundation in activity theory. Vygotsky (1978) explained, “Human beings actively remember with the help of signs” (p. 51), which includes words and concepts. While signs are tools for mediating remembering, meanings, as Leont’ev (1977) explained, “presuppose their reference to sensuous influences” (p. 176). Leont’ev (1977) further suggested a characteristic of sensuous images is they always “retain their initial objective reference” (p. 172). In this regard, the meaning about abstract concepts is intrinsically associated with the case example that was used to provide an objective reference for the concepts.

**Intrinsic reasons for the use of cases.** From an activity theory perspective, the use of intrinsic cases reflected their function as an object in a learning activity. There were two reasons why faculty members’ used cases for their intrinsic value:

- the significance and consequence of an event, and
- the opportunity for learning from an event, whether the learning was realized or not.
Faculty members’ use of cases for their intrinsic value was both preplanned and spontaneous. The spontaneous use of cases as objects in a learning activity was due to the perceived significance of a current event. While current events were used for the instrumental function of illustrating something else, they were also the object of some learning activities. With regard to the use of current events as the object of learning activities, Waugh stated some of his courses had been defined by particular events. He said, “You could not ignore that those events had occurred and that they were sort of the topics of the day” (WW-I1). Waugh also noted these events overtook the syllabus for his course. While Waugh had referenced high-consequence disaster events, such as the 2010 Haiti earthquake and Hurricane Katrina, other participants provided examples of how the significance of smaller current events led them to become the object of study. For example, in one of Phillips’s classes, a second plane crash involving people from the university had occurred just after the class had examined the 1995 Oklahoma City bombing and first plane crash cases. The need for the second plane crash to become the object of study was influenced by the fact that students knew someone killed in the crash (BP-I2). Phillips said students did not have a framework for understanding or dealing with events of this nature; hence there was a need to help them cope with the event and to consider how the university community might respond. These examples of the reasons for the use of current events reflected that the significance of events is local as well as global. The significance of events can be further established with the passing of time.

A proposition for this study was that certain events in the DEM field might be considered to be seminal events. During the first set of interviews, faculty members were asked to share their thoughts about seminal events in the DEM field. Noted characteristics of
semenal events included the impact and the opportunity for learning from these events. For example, Etkin noted seminal events are widely recognized at a national or global level and “shine … an important spotlight” (DE-I1) on something. He suggested the ice storm in 1998 was a seminal event in the Canadian context: “It was like an autopsy … It just revealed significant vulnerabilities that people weren’t aware of and led to large changes, in Québec anyway, in terms of the way some things were handled” (DE-I1). Phillips stated, “Big events drive change. So everybody looks at the big events” (BP-I1). For example, she added, “September 11th created massive change, not only here in the US [United States] but worldwide with homeland security and antiterrorism efforts, so that is obviously one that everybody looks at” (BP-I1). In addition, Waugh cited the Indian Ocean tsunami as an event of particular importance in the DEM field. He said the tsunami was “the first big case dealing with mass casualties” (WW-I1) and consequently there were “important lessons for future events” (WW-I1). Waugh also said a characteristic of events like the tsunami was they “shaped the way we think of disasters” (WW-I1). Similarly, McEntire said the 1984 chemical release at the Union Carbide plant in Bhopal “would be really important to study, because that changed disaster policy in the United States with legislation that was passed” (DM-I1). Jensen’s use of the Samuel Prince study of the Halifax explosion had a different type of significance, and reflected the use of a historic case for its intrinsic value. While the event had a significant impact, the significance of the learning from this case was it was the first systematic study of a disaster from a sociological perspective. Faculty members’ beliefs reflected the social significance, impact, and opportunity for collective learning, and development from disaster events went beyond the geographic location of hazard impact.
Faculty members also noted the significance of events was conditional in terms of being context dependent and relative to particular communities. For example, Phillips said the ice storms in Canada or the wildfires in Australia would have a particular significance in those country contexts (BP-I1). She also noted, from the fire management perspective, events such as the 1991 Oakland firestorm in California and the 1949 Mann Gulch fire in Montana would be important events to study. In addition, the plane crash case she used in conjunction with the 1995 Oklahoma City bombing case had particular significance within the local university community. Shaw referenced the two Coast Guard cases he used as being examples of seminal events. While the number of lives lost in the two cases made them significant events at the community level, they were also significant to Shaw, who had been personally involved in the response and had lost two of his close friends in one of the events (GS-I1--; GS-I2). The significance of a particular event was realized through a faculty member’s selection of a specific case as the object of a learning activity.

While faculty members recognized certain disaster events had a particular significance, they said this did not mean these cases were used in their teaching. For example, Etkin said, “I’m not sure the ones I pick as seminal we really treat adequately in our program” (DE-I1). As faculty members noted, a central factor influencing the selection and use of cases was their fit with the content of a course. In this regard, while cases are used for their intrinsic value because they shine a spotlight on something, they are still illustrative of something. Cases that were not seminal events were also selected because they provided the opportunity to learn from a particular event. A characteristic of these cases was that they were exemplars of expert practice in the DEM field (e.g., Shaw’s Coast Guard or La Salle Bank cases). The function of exemplar cases was for their illustrative value in learning about
the characteristics of expert practice, rather than their intrinsic value as a socially significant case. Thus, a characteristic of intrinsic cases was that they were both socially significant and provided the opportunity for learning from an event.

A key difference between faculty members’ reasoning for the use instrumental and intrinsic cases was in the motive that became the object for the activity. With instrumental cases, the primary motive was to develop students’ knowledge about ways of thinking and practising within the DEM field, and the case was a tool for bringing abstract concepts to life. Whereas with intrinsic cases, the primary motive was to learn from a particular case, and knowledge about a particular case became the object of the case activity. While the motives for the use of instrumental and intrinsic cases differed, the intrapsychological functions of the case as a tool were the same from an activity theory perspective. For example, as students read about a particular case, the activity of reading resulted in the generation of a sensuous image of objective reality, and meaning was ascribed to this image. Thus, the theoretical distinction between instrumental and intrinsic cases, from an activity theory perspective, is related to the motive for the activity, and this determines whether the primary function of a case in a learning activity is an object or a tool.

The literature on case-based research provided further insight into the theoretical reasons for using intrinsic cases. Yin (2014) provided more explicit guidance than Stake (1995) about the reasons for studying a single particular case. Yin (2014) suggested a single case study could be of value because it is a critical, extreme or unusual, revelatory, or longitudinal case. While distinguishing between types of cases that have intrinsic value, Yin (2014) noted single cases still have a theoretical association with something else. A critical case explicates or tests theory, an extreme or unusual case sheds light on something because
it deviates from the ordinary, a *revelatory* case gives insight into situations that may not have been previously accessible for different reasons, and a *longitudinal* case provides the opportunity to study how a situation changes over a period of time (Yin, 2014). These theoretical reasons for studying single cases provide a useful frame for considering the potential use of cases for their *intrinsic* value in learning activities. From an activity theory perspective, each of Yin’s (2014) reasons for using a single case reflects a different motive for the use of cases.

**How Faculty Members Use Cases in Their Teaching**

Through the cross-case analysis of faculty members’ examples of their case-based learning activity designs, patterns in the characteristics of how faculty members use cases in their teaching were identified. The patterns in the characteristics of the objects, mediating elements (i.e., tools, division of labour, rules), and activity structures of the case-based learning designs examined in this study will each be described in turn. Distinctions between the characteristics of the activity designs, based on the objects of the learning activities, will then be explained.

**Characteristics of objects in case-based learning activity designs.** From an activity theory perspective, objects distinguish activities. The objects of learning activities can be distinguished based on differences between learning needs. The primary distinction between the case-based activities examined in this study was whether the object was to develop students’ knowledge about something or to develop students’ knowledge of how to do something. Some activities reflected a conjunction of these motives. For example, the object of one of Jensen’s case-based learning activities was to develop students’ knowledge of
research methods (i.e., content analysis of media articles) as a means of developing their knowledge about the progress of recovery after flooding events.

Through cross-case analysis of the 37 examples of case-based learning activities examined in this study, additional patterns in the types of knowledge to be developed were identified. The object of activities to develop students’ knowledge about something was knowledge about human experience with hazards and disasters as well as emergency management and homeland security practices. The types of knowledge developed through the use of cases included (a) factual, conceptual, procedural, and strategic knowledge\(^\text{10}\) about DEM phenomena and (b) research methods for investigating these phenomena. The objects of faculty members’ learning activities reflected different combinations of these various learning needs and motives. For example, Etkin’s motive for using the Katrina paramedic story was based on the need to develop students’ knowledge about human experience with disasters, as well as the need to develop their knowledge about disciplinary concepts and principles as reflected in the case. Jensen and Etkin both used a case-based assignment to develop students’ knowledge about the four foundational dimensions of emergency management activity (i.e., mitigation, preparedness, response, and recovery). Waugh use of a case-based text written by social anthropologists was to develop students’ knowledge about a particular disciplinary way of understanding disaster recovery. Phillips’s motive for using the Oklahoma bombing and plane crash cases was based on the need for students to develop knowledge about what is empirically known about the psychosocial impacts of disasters and

\(^{10}\) The objects of faculty members’ case-based activities most closely reflect these types and subtypes of knowledge, as described in Anderson, Krathwohl, and Bloom’s (2001) taxonomy for the knowledge dimension of learning outcomes. Knowledge included disciplinary knowledge about DEM phenomenon (e.g., concepts, theory) as well as practice-based knowledge (e.g., four pillars, preparedness planning).
crisis events, as well as what is empirically known about how people recover from these
types of events. In her graduate-level classes, the objects of some of Phillips’s case activities
also focused on development of students’ knowledge about the availability and quality of
research findings related to the object of study. In all of these examples, the particular cases
were not the object of study; rather, the cases fulfilled the instrumental function of
developing students’ knowledge about human experience with hazards and disasters as well
as emergency management practice, what is empirically known about these phenomena, and
research methods for investigating these phenomena.

My research identified two different types of needs that became the motive for
activities to develop students’ knowledge of how to do something. The first need was to
develop students’ knowledge of emergency management practices and the second need was
to develop students’ knowledge of research methods. These different competencies reflect
the dual aims in a professionally oriented academic program of study. The learning needs
related to knowledge of emergency management practice included knowledge of what
professionals do and how professionals work. The objects of these activities were found to be
associated with one or more of the four functional areas of emergency management practice
(i.e., mitigation, preparedness, response, and recovery). In addition to a focus on developing
students’ knowledge of the functional dimensions of what professionals do, the objects of
case activities also focused on the development of knowledge and skills related to the social
(e.g., collaborative decision making) and technical (e.g., Hindcasting method used by Shaw)
dimensions of how professionals work. All of the case-based activities that focused on
development of students’ knowledge of professional practice reflected an integrated focus on
what professionals do and how professionals work.
The learning needs associated with objects that focused on the development of knowledge of research methods were also framed in relation to the outcomes for a specific course. For example, the objects of case-based activities in Kushma’s course related to different dimensions of evaluation research and interdisciplinary research. The objects of the case-based activities in these courses focused on development of students’ knowledge of, and thus competency with, using research methods used to investigate phenomena in the DEM field. The focus on development of research competencies was not limited to research courses. For example, Jensen’s motive for having students analyze media reports related to flooding was based on the need to develop students’ knowledge of research competencies, as well as their knowledge about the trajectory of flood recovery in different communities. The development of students’ knowledge of research was only reflected in graduate-level case activities.

In summary, faculty members’ reasoning for using cases was based on developing students’ knowledge about and knowledge of phenomena associated with DEM as a field of study. The content within this domain related to human experience with hazards and disasters, and emergency management and homeland security professional practice. The type of knowledge developed through the use of cases included (a) conceptual knowledge, procedural knowledge, and strategic knowledge; (b) what is empirically known about phenomena associated with the domain; and (c) methods of investigating phenomena in the domain. Faculty members’ reasoning for using cases to develop students’ knowledge of professional practice included the need to develop competencies related to what professionals do, as well as how professionals work. Another reason for using cases was to develop students’ knowledge of research methods. The development of knowledge of professional
practice as well as of research reflect the dual aims inherent in a professionally oriented academic field of study at a graduate level. While some of the objects of case studies focused on a single dimension of knowledge development, as the findings illustrate, many of the case-based activities reflected the use of one or more cases to develop students’ knowledge about and of various types of phenomena.

Table 10 summarizes the main categories of knowledge that were reflected in the objects of the case-based learning activities examined in this study. This table provides an overarching framework for explaining how the faculty members in this study used cases in their teaching and for conceptualizing how cases might be used in DEM postsecondary programs. The table also describes the function of cases in relation to the object of the activity.

Table 10

*Characteristics of Objects of Case-Based Activities*

<table>
<thead>
<tr>
<th>Main Type of Knowledge Development</th>
<th>Subtype of Knowledge Development</th>
</tr>
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<tbody>
<tr>
<td>Knowledge Development – To develop students’ knowledge about:</td>
<td>• A specific disaster event (intrinsic case)</td>
</tr>
<tr>
<td></td>
<td>• Human experience with hazards and disasters, including the ways of practicing in the disaster and emergency management field (instrumental case)</td>
</tr>
<tr>
<td></td>
<td>• Research methods for investigating these phenomena (instrumental case)</td>
</tr>
<tr>
<td>Competency Development – To develop students’ knowledge of:</td>
<td>• What DEM professionals do and how DEM professionals work (instrumental case)</td>
</tr>
<tr>
<td></td>
<td>• Research methods (instrumental case)</td>
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</tbody>
</table>

*Note. DEM = Disaster and Emergency Management.*
**Characteristics of mediating elements.** While a primary focus in the analysis of faculty members’ individual approaches to the use of cases was on the characteristics of their cases and case tools, the cross-case analysis also focused on identifying patterns associated with the other mediating elements, which are the division of labour and rules. During the analysis it became evident there was an inherent relationship between the material form of case tools and the division of labour in a given activity. This finding reflects the activity theory proposition that material tools shape the external and behavioural dimensions of human activity (Vygotsky, 1978). The characteristics of tools, division of labour, and rules that were identified through the cross-case analysis of the 37 case activity designs examined in this study will now be described, and factors that were found to influence these characteristics will be explained.

**Characteristics of tools.** From an activity theory perspective, psychological and material tools mediate human activity, and each type of tool has a different function (Vygotsky, 1978). Patterns related to the psychological and material dimensions of tools used in the case-based learning activities were identified. One of the patterns was that not all case tools had a material form. Another pattern was that the characteristics of material tools were related to their psychological function. Given these findings, the frame for describing the characteristics of case tools is based on the psychological functions of the tools.

*Psychological functions of cases as tools.* In all case activities, there appeared to be two distinct psychological dimensions to cases as tools. The first dimension was the *case* itself. The cases used in the learning activities examined in this study can all, with two
exceptions, be described as situations related to human experience with hazards, disasters, and crises. From an activity theory perspective, the psychological function of the case as a tool was to provide students with an account of a situation in way that allowed them to generate a sensuous image of a prior or hypothetical experience. Other than Jensen’s live case in which students interviewed people working with organizations that served populations with functional needs, the objective reference for cases was some form of a case description, which provided an account of a real or hypothetical situation. Through cross-case analysis of the cases used in the learning activities examined in this study, patterns related to the content of cases, number of cases, and the type of perspective or lens reflected in the case description were identified. These characteristics will be described in more detail later in this section.

The second psychological dimension of case tools differed based on whether the function of the case in relation to the object was to develop students’ knowledge about or knowledge of something. When the function of the case was to develop students’ knowledge about something, the second psychological dimension of the case tools was the knowledge that was the object of the learning activity. From an activity theory perspective, knowledge reflects cultural meaning about the world and the tool for conveying meaning is language (Leont’ev, 1977). Given that meaning can be framed in different ways (e.g., concepts, models) and from different perspectives (e.g., disciplinary lens, professional practice lens),

The exceptions were Kushma’s evaluation research cases, which did not deal with DEM-related phenomenon; rather, they were examples of other types of evaluation research scenarios. Kushma’s selection criteria for cases and case tools included the need to use cases that had been professionally developed. This led her to select cases published by Electronic Hallway, University of Washington (n.d.), and hence the content of cases was delimited by the cases in that collection that pertained to evaluation research.
this psychological dimension of case tools can be described as a knowledge frame. Any particular case (e.g., the Haiti earthquake, Hurricane Katrina) could be looked at through one or more knowledge frames, which could be classified based on the type of knowledge (e.g., conceptual, procedural), as well as by the number and type of perspectives or lenses through which the knowledge was framed.

In contrast, when the function of the case in an activity was to develop students’ knowledge of how to do something, the second psychological dimension of the case tools was a problem to solve. From an activity theory perspective, problems reflect needs that become the motive for an activity. The problem frame for a case activity situated students in relation to either a professional practice or a research problem. This psychological dimension of the case tool could be described based on the number and characteristics of problems associated with the case, as well as the type of perspective through which the problem was framed.

From a theoretical perspective, the intended effect of cases as tools was realized through the integrated function of the two different psychological dimensions of the case tools (i.e., case description and knowledge frame, case description and problem frame). The resulting type of case experience differed based on the object of the case activities. Table 11 illustrates the relationship between the characteristics of objects, psychological tools, and type of case experience.
Table 11

<table>
<thead>
<tr>
<th>Object of Case Activity</th>
<th>Psychological Tools</th>
<th>Type of Case Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop knowledge about</td>
<td>Case description and knowledge frame</td>
<td>Vicarious experience that supports construction of cultural meaning about characteristics of the experience</td>
</tr>
<tr>
<td>Develop knowledge of</td>
<td>Case description and problem frame</td>
<td>Simulated experience that supports synthesis and application of knowledge, and development of cultural forms of practice</td>
</tr>
</tbody>
</table>

*Forms of case tools.* The two different psychological dimensions of case tools (i.e., case, knowledge or problem frame) were presented verbally, in some material form (e.g., video, journal article, book), or some combination thereof (e.g., slideshow presentation and discussion about a case). Material tools were used for the purpose intended (e.g., journal articles, Lawnjeray® case), repurposed for educational use (e.g., media articles), or constructed by the faculty member using various media (e.g., slideshow presentations, handouts). Further, in their material form, the two different psychological dimensions of the case tools (i.e., the case and knowledge frame or the case and problem frame) could be conjoined (e.g., case-based book or journal article, exercise scenario), or comprised of two or more separate tools, with the tools having different psychological functions (e.g., Phillips’s use of multiple tools for presentation of the Haiti earthquake case and use of the *At Risk* framework as the associated conceptual frame). The characteristics of each of the different psychological and material dimensions of case tools will now be described in further detail.

*Characteristics of cases and case descriptions.* Through analysis of the cases used in the learning activities examined in this study, seven types of attributes of cases were identified. These attributes expand on the definition of what constitutes a case in case-based learning activities in DEM postsecondary programs. The first category of attributes related to
the situation that was presented in a case. The associated attributes included (a) the degree of realism of a case, (b) the hazard type, and (c) the event type, (d) the context, and (e) the temporal dimensions of a case. The second category of attributes related to the dimension of human experience presented in a case. The associated attributes were (a) the social unit (or units) that was (or were) the focus of analysis in a case, and (b) the associated dimension of professional activity. The patterns in the characteristics of these seven attributes are described in Table 12. These categories and attributes provide a potential frame for indexing DEM cases.

Table 12
Attributes and Characteristics of Disaster and Emergency Management Cases

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Characteristics of Attribute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree of Realism</td>
<td>Cases included real experiences (e.g., current or historical situations or disaster events), hypothetical scenarios (e.g., Shaw’s Hindcasting and Lawnjeray® cases), as well as fictitious cases based on real experience (e.g., Shaw’s media policy case). All cases for developing students’ knowledge about something were real experiences, whereas real, hypothetical, and fictitious cases were used to develop students’ knowledge of how to do something.</td>
</tr>
<tr>
<td>Hazard Type</td>
<td>Hazard types included natural hazards (e.g., earthquakes, floods), technological hazards (e.g., nuclear, plane crash), and human-caused hazards (e.g., terrorist incident, famine). In keeping with professional practice norms, some preparedness cases took an all-hazards approach.</td>
</tr>
<tr>
<td>Event Type</td>
<td>All cases related to an actual or potential event, which reflected human experience with different types of hazards and threats. The types of events varied. While there are different definitions of event types, there is no single recognized typology. The framing of event types, as reflected in the material tools used in case activities, included a public relations crisis (e.g., Shaw’s media strategy case), declared disasters (e.g., Jensen’s recovery case), terrorist events (e.g., McEntire’s 9–11 case), and war and drought (e.g., Etkin’s Another Day In Paradise case).</td>
</tr>
<tr>
<td>Attribute</td>
<td>Characteristics of Attribute</td>
</tr>
<tr>
<td>----------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Context</td>
<td>Cases could be classed as either being situated in a domestic or international context. The context for cases could also be described based on social, political, economic, or physical attributes. For example, the Haiti earthquake and the Australian fires cases were both international cases; however, they were situated in different socioeconomic contexts. The context for cases was sometimes delimited by the description of a course in the syllabus.</td>
</tr>
<tr>
<td>Temporality</td>
<td>Cases could also be classed based on different dimensions of time. The perspective taken in cases was prospective (e.g., Shaw’s pandemic planning case), retrospective (e.g., Etkin’s Grassy Narrows case), or some combination thereof (e.g., Jensen’s live functional needs case). Situations could also be classed based the period of time studied in a case, which ranged from short to long. For example, Shaw’s media policy case was focused on what needed to happen in the first hours following a crisis incident, Jensen bounded students’ examination of flood recovery to the first 180 days following the event, and the time frame utilized in Etkin’s Grassy Narrows case spanned decades. Events studied could also be classed based on whether they were sudden or slow onset events.</td>
</tr>
<tr>
<td>Social Unit</td>
<td>Cases could be classed based on whether the social unit that was the primary focus in a case was related to individual experiences (e.g., Phillips’s examination of psychosocial responses to disasters), organizational experiences (e.g., Shaw’s LaSalle Bank and Hindcasting cases), community experiences (e.g., Etkin’s Grassy Narrows case, Kushma’s Hurricane Sandy case), country experiences (e.g., Phillips Haiti case, Waugh’s Japan earthquake and nuclear event case), or some combination thereof (e.g., individual and organizational experience in Jensen’s live functional needs case). The object of a learning activity delimited the social unit (or units) of analysis within a case.</td>
</tr>
<tr>
<td>Dimension of Professional Activity</td>
<td>All cases related to one or more dimensions of what is referred to as the disaster life cycle (i.e., prevention, mitigation, preparedness, response, and recovery). While I acknowledge that these dimensions are not necessarily discrete activities, each dimension is recognized as having a different intended outcome. Cases that dealt with developing students’ understanding of theory about the root causes of disasters did not initially appear to fit with a specific practice dimension; however, the inclusion of prevention as a discrete type of activity, rather than as a hybrid of mitigation, gives space for framing an understanding causality.</td>
</tr>
</tbody>
</table>
The number of cases selected for a learning activity was dependent on the function of the case relative to the object of the activity. Only one case was used in activities designed to develop students’ knowledge of how to do something; this was because the associated learning activity was some form of a simulation. In addition, while an intrinsic case was also a single particular case, learning activities that used intrinsic cases were sometimes supplemented by the use of related instrumental cases (e.g., McEntire’s use of the 9–11 case as well as other cases of terrorist activity). The number of cases looked at in activities to develop students’ knowledge about something varied. From a theoretical perspective, only one case is need to generate an experiential way of understanding abstract ideas. However, in some activities designed to develop students’ knowledge about something, two or more cases were used. The following reasons were given for using multiple cases:

- the need to deepen students’ knowledge about phenomena that are inherently complex and situated (e.g., Etkin’s use of comparative cases to support development of students’ knowledge about theory);
- the state of development of DEM as a field of study (e.g., Jensen’s selection of cases framed from different disciplinary perspectives because of the lack of synthesis of this literature); and
- the characteristics of case tools (e.g., Waugh’s and Phillips’s use of case-based texts that examined cases from a single or multidisciplinary perspective).

Faculty members’ selection of specific cases was based on necessary as well as enabling criteria.

The necessary criterion for case selection differed based on the function of the case in a learning activity. In some instances, faculty members selected cases based on the need to
study a particular case. The reasoning for developing students’ knowledge about a particular case was because of the social significance of the case, either at the time of delivery of the course (i.e., current cases) or historically. In contrast, the selection of cases to develop students’ knowledge about something was based on the instrumental function of the case—it needed to be a *good example* of the phenomenon that was the object of study. By definition (Yin, 2014), a case is situated in a particular context, and in this regard, the selection of the context for a case could be either an active or passive choice. When the instrumental function of a case was the need to develop students’ knowledge of how to do something, the case needed to be a *realistic example* of a particular type of practice (or research) problem and context in which students are expected to be able to perform. The relationship between an instrumental case and the object of the case activity was always theoretical, and thus the criteria for selection of instrumental cases were based faculty members’ qualitative assessment of the degree of fit between the case and the object of the case activity. Regardless of the function of a case, the necessary criteria for selection of a case were related to the object of a learning activity.

In some instances, the selection of instrumental cases was further bounded by criteria that reflected faculty members’ beliefs about how the contents of a case supported students’ learning. The following list provides examples of this type of enabling criteria:

- the need for a case to relate to student motives and interests (e.g., Phillips’s selection of fire cases);
- the need to use a current case that was within students’ memory (e.g., Phillips’s selection of international cases that were within students’ realm of experience);
• the need to have common student starting points in a learning activity (e.g., Phillips’s use of Australian fire cases); and

• the need to be an exemplar illustration of practice (e.g., Shaw’s selection of the LaSalle Bank fire case).

Additionally, faculty members’ personal interest and knowledge about the content of particular cases was another factor that influenced case selection. For example, Phillips selected her own research cases because she could bring them alive faster and provide more detail for students. Similarly, Shaw selected the Coast Guard case because of his personal experience and insights into the case. Faculty members also selected cases for other types of personal reasons. For example, Etkin selected the Grassy Narrow’s case because of his moral outrage about what happened there. As illustrated, the necessary and enabling criteria that influenced case selection all related to decisions about the contents of a case.

The selection of instrumental cases was further influenced by the availability of material tools for presentation of a case and faculty members’ beliefs about the effects of case tools. With reference to the availability of material tools, Phillips talked about the time between disasters and the conduct and publication of research as being factors that influenced the availability of empirically based disaster case study material (BP-I2). With reference to beliefs about the effects of tools in activities designed to develop students’ knowledge about something, faculty members used cases because they brought abstract ideas to life for students. Cases were brought to life through faculty members’ narrative reconstruction of events and through the use of different kinds of material tools, including various forms of texts (e.g., newspaper articles, books), visual media (e.g., pictures, video), and artifacts from disaster events (e.g., the Oklahoma City bombing Hope Chest), or some combination thereof.
Each of these different types of tools brought cases to life for students in different ways. Faculty members’ reasoning for selecting different material tools reflected their beliefs about the particular effects of tools. For example, Waugh frequently used images and videos in his slideshow presentations about different cases because of his belief that visual images “stick in your mind” (WW-I1) in a way that is different from textual material. In addition, Etkin said he was looking for material tools that brought a case to life in a way that was interesting and “memory worthy” (DE-I2). One of his reasons for selecting the Three Mile Island video was because it captured the lived experience of those impacted by the event, including their feelings and reactions. The intrapsychological effects of case tools were not always related to the form. For example, the affective engagement of students in a case could also be realized through different types of material tools. Phillips used personal and community artifacts related to the Oklahoma City bombing to bring the case to life and said that when students held a piece of the building in their hand it brought many to tears (BP-I2). As these examples illustrate, faculty members’ reasoning for the selection of material tools for presentation of a case was influenced by their beliefs about the intrapsychological effects of different types of material tools in supporting students’ learning and development.

In case activities designed to develop students’ knowledge of how to do something, the case was a tool for engaging students in a problem-based simulation that supported their application of knowledge. Some material tools were selected because they had been designed for this explicit purpose. For example, Kushma said she preferred to use professionally produced teaching cases, which are available through established case distributors such as Electronic Hallway (Electronic Hallway, University of Washington, n.d.). Kushma said that while she had an interest in learning to construct these types of teaching cases, she had not
yet had the opportunity to learn how to do this. Similarly, Shaw’s selection of the media policy case was because it had been designed for use as a problem-based teaching case. Standards of practice within some fields of study (i.e., business) exist for the construction of these kinds of cases, which are based on real situations and can be accessed via case libraries. Shaw’s Lawnjeray® case, while having a similar problem-based design structure, also included a tabletop disaster exercise, which is a common DEM training activity. In addition to selecting material tools because they had been designed to support simulated activities, faculty members used material tools that had been designed for other purposes or constructed their own tools. For example, Kushma used various media materials related to Hurricane Sandy in her case-based interdisciplinary research assignment. Shaw wrote a fictitious newspaper article about fire at a university to use as a tool in the Hindcasting case activity. As these examples illustrate, the effects of case tools for developing students’ knowledge of how to do something were relative to the intention with regard to the use of tools, and this may or may not have been the original intended effect of the tool.

Regardless of the function of a case or the form of case tools in a learning activity, cases, as instances of human experience, were framed from one or more perspectives. The perspectives reflected in case descriptions included people impacted by a disaster (e.g., Etkin’s Katrina paramedic story), media (e.g., media articles in Jensen’s recovery case activity; media report in Shaw’s Hindcasting case), professional practice (e.g., Etkin’s Another Day in Paradise case; Shaw’s Coast Guard case), and government (e.g., Phillips’s use of Haiti reconstruction plan; McEntire’s use of the National Commission on Terrorist Attacks Upon the United States [2004] 9–11 Commission Report). Faculty members also drew from personal experience to describe a case, with their frame of reference either being a
researcher (e.g., Phillips Grand Bayou and Santa Cruz cases), a professional (e.g., Shaw’s Coast Guard experience), or a participant observer (e.g., Phillips’s experience of the Oklahoma City bombing memorial activities). Any given case activity could have multiple tools for describing a particular case, and thus offer multiple perspectives on the case (e.g., Phillips’s use of multiple tools for presentation of the Haiti case). In addition to the perspectives presented through case tools, students brought their own perspectives about current or historical cases into a learning activity. These perspectives reflected their direct personal experience with a disaster or indirect knowledge about a disaster (e.g., media perspectives, stories from others). In addition to the tools used to present a case, case tools also included the knowledge frame or problem frame used in the case activity. The tools for case description could be conjoined with or separate from the tools for the knowledge frame or problem frame in a case-based learning activity. The characteristics of knowledge frames and problem frames reflected their different functions in case activities.

*Characteristics of knowledge frames.* In activities designed to develop students’ knowledge about something, the knowledge frame (or frames) in a case-based learning activity reflected disciplinary perspectives, professional practice perspectives, or some combination thereof. The use of a disciplinary lens was motivated by the need to develop students’ ways of seeing and thinking about human experience with hazards, disasters, and crises through one or more disciplinary perspectives. In contrast, the use of a professional practice lens reflected that what was examined in case-based learning activities was related to some dimension of practice, and there was a need to develop students’ ways of thinking about and engaging in practice. The knowledge frame in cases activities was either directly or indirectly associated with a case. When it was directly associated with a case, the case
description and knowledge frame were conjoined in one tool, whereas when the association was indirect, the case description and knowledge frame were separate tools. The choice of a knowledge frame, while bounded by the object of a case activity, was otherwise a design decision that was sometimes but not always influenced by the availability of empirically based literature related to a specific case.

When the selection criteria for a case included the need to have empirical evidence related to a case, the case description and knowledge frame were conjoined, and there was a direct association between these two psychological dimensions of the case tools. Research-based books and case-based journal articles are examples of material tools that fulfilled the different psychological functions of bringing a case to life and giving meaning to the phenomena in a case through a disciplinary lens. Examples of the use of conjoined tools for their instrumental value were McEntire’s and Jensen’s use of peer-reviewed journal articles to develop students’ knowledge about different aspects of disaster response and recovery. The criterion of having empirical evidence related to a case was also met through the use of a faculty member’s own research. For example, rather than using published materials, Phillips constructed slideshow presentations for use with her mini-case activities based on her own research. Her presentations included photographs as well as text that framed the phenomena and issues in the case. The decision to use case-based research as a tool was influenced by the time lag between an event and the conduct and publication of research (BP-I2). An affordance of the use of case-based research as a tool was that it could also be used to support development of students’ knowledge about the methods of inquiry; whether or not this function was realized was another design decision.
The case and the knowledge frame could also be separate tools. Phillips’s Oklahoma City bombing case is an example of a case activity in which the knowledge frame and tools for describing the case were separate tools. The knowledge frame for the case was a chapter from her book on *Disaster Recovery* (Phillips, 2009) that synthesized what is empirically known about the psychosocial impacts of disasters and the psychosocial recovery from these impacts. From a case-based research perspective, this type of knowledge frame is a *categorical aggregation* (Stake, 1995, p. 74) of knowledge about the phenomenon that is the object of study; the association between a particular case, as an example of something, and the knowledge frame is theoretical and indirect. When the association between the case and knowledge frame is indirect, the association needs to be constructed by the faculty member or by the students as individuals or a collective. The approach to constructing the association was a design choice related to the division of labour in a given learning activity.

An affordance of the use of a separate tool for the knowledge frame is that it supports the use of multiple cases as examples of knowledge about something. Phillips said she used multiple cases to develop students’ knowledge about variability and the reasoning for variability between cases (B. Phillips, personal communication, March 18, 2013). In this regard, the use of multiple cases supports development of a deeper level of understanding about something. From a case-based research perspective, there can be different reasons for selecting multiple cases and different types of associative relationships between cases. As previously noted, Yin (2014) suggested additional cases can be selected because they are literal or theoretical replication of some aspect of a given case. While this level of reasoning was not evident in the faculty members’ design decisions, the theoretical reasons for using more than one case and for the selection of multiple cases, as established in the case-based
research literature (Stake, 2006; Yin, 2014), provides reasoning for the use of multiple cases, as well as methods of generalizing from a set of cases.

When the knowledge frame was a disciplinary lens, it could be described based on the number and type of disciplinary perspectives (e.g., sociology, geography) used to give meaning to the phenomena in the case as well as the relationship between these disciplinary perspectives (e.g., multidisciplinary, interdisciplinary). Theoretically, any particular case could be looked at from a number of different disciplinary perspectives. However, as Kreber (2009) noted, different disciplines “look at” (p. 11) different things and they do so in different ways. In this regard, the disciplinary lens (lenses) for “looking through and with” (Kreber, 2009, p. 11), the cases in the learning activities examined in this study were reflective of the disciplines that have looked at the phenomenon that was the object of study in a case-based learning activity. For example, Etkin and Phillips looked at different aspects of Hurricane Katrina as a case and used different disciplinary perspectives to frame and develop students’ knowledge about the phenomenon looked at in the case.

The knowledge frame used in activities to develop students’ knowledge about something also reflected professional practice perspectives. The dominant lens for framing practice was the four-phase model (i.e., mitigation, preparedness, response, recovery), which, as noted in Chapter 2, has its origins in the United States context. There was a distinct lack of reference in the case activities examined in this study to the use of other variations of this model, as found in other country contexts (e.g., Australia) and in the international context. Examples of the use of the dominant professional practice frame as the lens for “looking through and with” (Kreber, 2009, p. 11) in case activities were Etkin’s and Jensen’s case-based assignments that required students to look at and examine a disaster event through the
lens of the four-phase model. All of the cases, to some degree, were framed in relation to one or more dimensions of the four-phase model, even when the primary conceptual lens for developing students’ knowledge about a case was a disciplinary lens. For example, Waugh selected a case-based text written by social anthropologists because it presented students with an alternative disciplinary way of understanding different aspects of disaster recovery.

In addition to the use of existing knowledge frames for developing students’ knowledge about a case, students were sometimes asked for their own interpretation of a case. For example, Etkin noted that with the Hurricane Katrina paramedic story he did not frame the issues in the case, rather he asked the students to talk about it. Etkin further explained that the characteristics of the tool supported this approach. Stake (1995) referred to the individualized approach to generation of meaning about a case as “naturalistic generalization” (p. 85) and contrasted this with meaning constructed by generalizations made by others. Later, in the Hurricane Katrina paramedic case activity, Etkin connected students’ generalizations about the issues in the case to disciplinary ways of thinking about the issues.

The knowledge frame in case-based learning activities could also be described by way of the type of knowledge to be developed. Knowledge types (Anderson, Krathwohl, & Bloom, 2001) reflected in the object of the case-based activities included factual knowledge (e.g., McEntire’s examples of different types of terrorist organizations), conceptual knowledge (e.g., Jensen’s examination about what is known about response practices; Waugh’s use of disciplinary theories), procedural knowledge (e.g., Phillips’s examples of community based recovery practices), and strategic knowledge (e.g., Phillips’s examination of the implications of theories about causality for professional practice). In contrast, the knowledge type developed in activities used to develop students’ knowledge of how to do
something always included procedural knowledge, and the psychological tool to develop this type of knowledge was a problem to solve.

*Characteristics of problem frames.* In activities designed to develop students’ knowledge of how to do something, the problem was framed from either a professional practice or research perspective. These different problem types reflect the dual aims in professionally oriented graduate programs of study. As with the knowledge frame, the problem frame for a case could be conjoined with the case description or a separate tool. For example, the media policy case used by Shaw was a Harvard business case, and the problem frame and case description were conjoined in one material tool. Whereas in Kushma’s interdisciplinary research assignment, the problem that was the motive for the case-based activity was a National Science Foundation call for interdisciplinary research proposals, and the case description associated with this activity was contained in media reports about Hurricane Sandy. The characteristics of the problem in case-based learning activities to develop students’ knowledge of how to do something will be described using Jonassen’s (2011) 5-point schema for framing the external characteristics of professional practice and research problems in learning activities.

The first characteristic was the *structuredness* of problems, which is a function of problem attributes, solution attributes, as well as methods for solving problems (Jonassen, 2011). The problems in the case-based learning activities were all ill-structured real-world problems, with no one right answer. As Shaw explained, students needed to develop a “best approach” (GS-I1) to solving problems, which required they make individual or collective judgments about how to deal with a situation. The research problems were also real-world problems; their degree of structure varied. Kushma’s interdisciplinary research proposal
activity was the most ill structured, whereas the problem attributes were more defined in her evaluation research case-based learning activities.

The second characteristic of problems is the context in which a problem is situated. The problems presented through cases in this study were situated in either a professional practice or research context in which students were expected to be able to apply their knowledge in the future. Situated problems require that students grapple with the context as they deal with a problem (Jonassen, 2011). The context for all but one of the problem-based cases (i.e., Shaw’s pandemic case was Irish) was the United States context.

A third characteristic of problems is their complexity. Jonassen (2011) suggested that while problem complexity and structuredness are interrelated, problem complexity is a function of the number and characteristics of the components reflected in a problem as well as the interrelationship between the components. Through cross-case analysis of the problems in the case-based learning activities in this study, two additional factors were found to be an influence on the complexity of problems: the degree of realism of a case and the number of perspectives about the problem reflected in the case. Hypothetical cases that were scripted (i.e., McEntire’s ICS fire case, Shaw’s Hindcasting and Lawnjeray® cases), while varying in complexity, allowed for the most control over the number of problem components. The problems in cases that were based on real situations (i.e., Shaw’s Coast Guard cases, Kushma’s evaluation research cases) were inherently more complex than a hypothetical case; however, the degree of problem complexity was still controlled by the level of detail provided in the case description. Problems in live cases (e.g., Jensen’s functional needs case) are potentially the most complex because information pertaining to the situation may be
unknown (e.g., organizational experience with preparedness for disaster) and cannot be controlled other than by bounding the focus of inquiry about a problem.

The influence of the number of perspectives about a problem in a case was a function of the characteristics of the case tools. For example, while the La Salle Bank fire case article provided a first-person account of the business continuity manager’s response to the problem, employee and client perspectives were also presented and were factors to consider in dealing with the case. Problem complexity was further increased when the two psychological dimensions of case tools (i.e., case description and problem frame) were separate. For example, in Kushma’s interdisciplinary research case activity, each tool included a different problem frame. While the primary problem was the need to develop an interdisciplinary research proposal for the National Science Foundation, the proposal needed to be based on the Hurricane Sandy situation, which reflected any number of ill-structured and complex problems and requirements. In this example, the level of problem complexity in the learning activity was increased because there were two different types of problems as well as two different types of needs and motives associated with the activity. Thus, the findings from this study suggest that problem complexity in a case-based learning activity, while being a function of the number and characteristics of problem components and the interrelationship between components, is also influenced by the degree of realism of the case and the characteristics of the case tools, which in turn affect the number of perspectives provided about a case and the quantity and types of problems associated with a given case-based learning activity.

The *dynamicity* of problems refers to whether or not the problem changes over time (Jonassen, 2011). In DEM contexts, problems are inherently dynamic. In the problem-based
learning activities examined in this study, problems were either presented as manifest at a particular point in time (e.g., Shaw’s Hindcasting and pandemic planning cases) or the problem changed during the course of a learning activity (e.g., McEntire’s ICS case; Shaw’s Lawnjeray© case). Additionally, the time perspective students were given for dealing with the problem could be either static or dynamic. These two different elements of the dynamicity of problems were reflected in any individual case-based learning activity. For example, in Shaw’s media strategy case, the problem was presented as manifest at a particular point in time, and students were asked how they would deal with the problem at different periods of time following the event. The findings of this study suggest that the dynamicity of problems case-based learning activities, even when they are simulations of authentic activities, is a function of the design of a case-based activity, rather than the problem itself.

Jonassen (2011) suggested that domain and context specificity are other characteristics of problems. He noted problems within domains and disciplines differ, and that these differences influence the strategies and methods for dealing with problems. The problems in case-based learning activities dealt with human experience in relation to hazards, disasters, and crises, and thus required attention to human factors, as well as other types of situational attributes. In this regard, DEM as a field of study draws from both hard and soft sciences, and different worldviews about the nature of problems. For example, risk management problems can be addressed from a realist or constructivist perspective. The particular disciplinary perspectives that students had been exposed to and were learning about were thus an influence on their approach to dealing with problem presented in a given case. In addition to disciplinary influences on problem characteristics, problem framing and
resolution were further influenced by faculty members’ beliefs about professional practice. In particular, faculty members noted a characteristic of problem solving in the DEM field was that it is a collaborative activity requiring engagement of stakeholders with different perspectives and interests. Thus, a characteristic of DEM professional practice problems is they engage multiple stakeholders and, therefore, need to reflect different stakeholder perspectives. In discussing context specificity, Jonassen (2011) suggested medical practice in domestic and international contexts could differ; thus, in addition to domain and disciplinary differences, context could influence problem characteristics. The professional practice problems reflected in the case activities examined in this study were all framed from a domestic (United States) practice perspective. From my own professional experience, I know there are differences between practice in domestic and international contexts, and while some aspect of problem framing and methods of problem resolution are not context dependent, other aspects are.

*Summary of the characteristics of case tools.* In summary, the data suggest there are two psychological dimensions of the tools used in case-based learning activities. The first dimension was the case itself, which was presented to students through some form of case description. The case was a proxy for real experience, and hence the function of the first psychological dimension of case tools was to bring the case to life for students. Cases, as examples of human experience, could be framed from different experiential perspectives. The second psychological dimension of case tools differed based on the function of the case in a learning activity. In cases designed to develop students’ knowledge about something, the second dimension of the case tool was the knowledge that was the object of the learning activity. The knowledge frame was a psychological tool for ascribing cultural meaning and
developing students’ disciplinary way of seeing and thinking about human experiences with hazards, disasters, and crises. Disciplinary knowledge was also was framed and situated in relation to some dimension of professional practice. The association between a knowledge frame and a case could be direct or indirect; this association was influenced by the characteristics of the case tools. In cases designed to develop students’ knowledge of how to do something, the second psychological dimension of the case tools was a problem to solve that became a motive in a learning activity. Problem types included professional practice and research problems. The case descriptions and knowledge frame or problem frame could be conjoined or separate and be presented verbally or in some material form. Material forms of case tools could be used for their intended purpose or could be repurposed for use in a case-based learning activity. The function of cases was reflected in the form of case tools, which were an influence on the division of labour and hence structure of case-based learning activities.

**Characteristics of the division of labour.** From an activity theory perspective, the division of labour mediates the community’s interaction with an object through division of tasks and power (Engeström, 2010). The community in the learning activities included the students and instructor for the class, and division of labour defined the roles of students and instructor in a given learning activity. Through comparative analysis of faculty members’ case-based learning activity designs, three primary patterns in the division of labour were identified. Case activities could be:
• individually oriented\textsuperscript{12} intrapsychological activities (e.g., reading activity);
• collectively oriented interpsychologically mediated activities (e.g., presentation, discussion, or simulation activity); or
• some combination thereof (e.g., reading + case analysis + discussion activities).

These patterns in the division of labour were influenced by the characteristics of case tools, as well as pedagogical choices of the faculty member.

In activities designed to develop students’ knowledge about something, the division of labour and hence structure of the case activity was influenced by whether the case description and the knowledge frame for a case were conjoined or were separate tools. The use of conjoined tools (e.g., journal article, book) supported individually oriented activities such as reading assignments, which may or may not be supported by further discussion about the case. When the two psychological dimensions of the case tools were not conjoined, the division of labour reflected differences in whether the responsibility for the analytic effort in creating the association between the case description and the knowledge frame for the case was the responsibility of the faculty member (e.g., McEntire’s reasoning for the timing of the 9–11 plane crashes), an individual student (e.g., Etkin’s undergraduate case assignment), a collective group of students (e.g., Jensen’s peer group discussions), or some combination thereof (e.g., Phillips’s mini-cases). These patterns in the division of labour were the same regardless of whether case was being used for its instrumental or intrinsic value.

\textsuperscript{12} Engeström (2015) asserted, “We may speak of the activity of the individual, but never of individual activity; only actions are individual” (p. 54). Hence, a reading activity can be considered to be individually oriented activity in which the assignment of readings is an action in a collective learning activity and the reading of text becomes an individual action.
Another pattern in the division of labour related to the selection of cases and case tools. In most of the case activities, the faculty member selected the cases and the case tools. This reflects the traditional division of power in learning activities, which from an activity theory perspective can be understood based on the construct of the “zone of proximal development” (Vygotsky, 1978, p. 86). In a few of the case-based activities in this study, the responsibility for selecting the case and case tools was given to the students. Students’ selection of cases and case tools was sometimes, but not always, bound by criteria for case selection. For example, as the Phillips’s *International* course progressed, she gave students more opportunity and responsibility for selecting readings. Students’ selections of case tools were bounded by the case being studied. In contrast, in Etkin’s and Jensen’s case-based assignment activities, students selected the case as well as tools that described the case. Jensen bounded students’ selection of a case (i.e., needed to be an example of a disaster in a particular period of time), whereas Etkin expanded the parameters for case selection, noting that a disaster could be something that had a cultural, rather than just a physical, impact. In all of the instances in which students were given the responsibility for selecting a case, the knowledge frame for the case was still provided by the faculty member. In addition to the division of labour, case-based learning activities were further mediated by the prescription of rules.

*Characteristics of rules.* The third mediating element in the case-based learning activities was rules. Engeström (2010) suggested rules are “the explicit and implicit regulations, norms, conventions and standards that constrain action within the activity system” (p. 6). Rules reflect cultural practice in different milieu. Through cross-case analysis of the prescribed rules for case-based activities, five categories of rules were identified. The
first category was timing rules, which included things such as sequencing of actions and goals (e.g., completing readings before coming to class), due dates for assignments, and whether late papers were accepted or not. The timing rules reflected conventions in an academic setting. The second category was participation rules. For example, McEntire’s (DM-CS3) syllabus for the Homeland Security course included rules for participation, attendance, respectful behaviour, and restrictions on cell phone use during class. While some of these rules reflect norms in an academic context, faculty members’ prescription of participation expectations was also found to be reflective of their personal beliefs and values (e.g., Phillips’s theoretical grounding of participation expectations). The third category was assignment rules, which aligned with different elements in an activity system. As an example, the rules for Jensen’s undergraduate disaster case study assignment included directions related to the topics to be covered (object), tasks (actions and goals), literature sources and presentation guidelines (tools), team roles (division of labour), and grading criteria (outcome; JJ-CS1). The fourth category was institutional rules. For example, Phillips set out expectations with regard to plagiarism and accessibility in her Comparative and International Dimensions of Fire and Emergency Management course syllabus (BP-CS1). The fifth category was disciplinary rules, which reflected norms related to things like critical thinking. For example, the explanation for grading criteria in Phillips’s Populations At Risk course syllabus (BP-CS2) reflected that higher grades were given when written or oral responses made explicit references to readings, and demonstrated reflection the about application of the material.

This analysis of the characteristics of tools, division and labour, and rules in faculty members’ use of case-based learning activities was framed in relation to the triangular model
of activity, as initially developed by Vygotsky (1978) and further developed by Engeström (2001). The analysis of the characteristics of case-based activities was also framed by the use of the hierarchical model of activity, as described by Leont’ev (1974). The focus of analysis of the hierarchical structure of activity focused on understanding the prescribed sequence of actions and goals that comprised each of the 37 case-based learning activity designs examined in this study. The next section will describe the patterns in the structures of the case-based learning activities and expand on the findings about the interrelationship between the characteristics of the activity elements (i.e., tools, division of labour, rules) as well as the actions and goals that comprised the activities.

**Characteristics of structures of case-based learning activities.** Through cross-case analysis of the characteristics of the case-based learning activity designs examined in this study, three primary types of activity structures were identified. Activities could be classed as having a low, medium, or high structure. Differences between structures related to the degree of prescription, the types of actions and goals, and the characteristics of tools and the division of labour. While there were distinct differences between each of the three types of activity structures, a given case-based learning activity could be comprised of one or more of these types. Case activities also reflected different patterns with regard to the use of cases within a given course. These different attributes of the structures of case-based learning activities will now be described in more detail.

**Low-structured activities.** Low-structured activities were tool-mediated intrapsychological activities that supported the development of students’ knowledge about a particular case or knowledge about something. Low-structured activities were clearly prescribed with a limited number of actions and goals. In low-structured activities the case
and knowledge frame were conjoined in one material tool, and form of tool was thus an influence on the structure of the activity. The actions, goals, and division of labour in low-structured activities were that the instructor selected and assigned readings and students read the case material or materials (e.g., article, book). Reading is an individualized type of activity, and there are both external and internal dimensions to the action of reading. The material form of the tool shaped the external action, which was to read something. The goal of the action of reading related to the internal dimension of the activity, which was to develop students’ knowledge about hazards, disasters, and emergency management, either generally or in relation to a specific case from a particular cultural-historic perspective.

There were two types of variations in low-structured activity designs. The first variation related to the division of labour for readings selection; this variation related to the external dimension of the activity. In most low-structured case-based learning activities, the faculty member selected the readings. An exception to this approach was seen in the latter part of Phillips’s International course, when she gave students responsibility for the selection of readings. The second variation was when additional directions pertaining to intrapsychological dimension of the reading activity were provided. For example, in Jensen’s Response Theory and Practice course she assigned multiple case-based readings and asked students “to evaluate them individually and then to integrate them and synthesize across them looking for some sort of metacategory knowledge” (JJ-I1). In this example, the actions and goals of the intrapsychological dimension of the activity became more demanding and complex.

Low-structured readings activities could be discrete activities, or linked to and associated with medium- or high-structured activities case activities. For example,
McEntire’s pedagogical practice was to assign readings but not revisit the cases in any depth in the course; rather, he used the class space to examine other related cases and material. In contrast, Phillips’s and Jensen’s approach to the use of assigned readings was as a foundational activity that supported later discussion and further analysis of the case readings in a discrete activity within a course. These variations in low-structured activities reflected the personal pedagogical practices of the individual faculty members with regard to the use of cases in particular courses. In practice, low- and medium- or high-structured case activities were often linked.

Medium-structured activities. Medium structured activities were interpsychologically mediated activities that supported the development of students’ knowledge about a particular case or knowledge about something else in a face-to-face or virtual synchronous class setting. The actions and goals in medium-structured activities were to present or to discuss a case and in doing so to ascribe meaning to the case. The external characteristics of presentation and discussion based activities were influenced by (a) whether or not there were material tools for the case or knowledge frame for the case, (b) the form of the material tools, and (c) faculty members’ personal pedagogical beliefs and practices. The function of cases in medium-structured activities was for intrinsic as well as instrumental value.

In medium-structured activities that involved no material case tools, the initial division of labour for constructing the associative connection between the case and knowledge frame was with the instructor. The instructor verbally presented a case and in doing so ascribed meaning to the case. McEntire said he frequently provided verbal examples of cases in his teaching. He noted that in some instances the use of a case as an example was spontaneous, while in other instances the use of particular case examples was planned. From
an activity theory perspective, the spontaneous use of cases, by either an instructor or a
student, is an example of an operation based on a condition, whereas the planned use of cases
reflects intended actions directed towards specific goals. In both instances, the operation and
action address the same need, which is to provide an experiential way of understanding
abstract ideas. Presentation- and discussion-based activities could also be mediated through
the use of material case tools.

The psychological and material characteristics of case tools influenced the structure
of presentation- and discussion-based activity designs. Etkin’s use of the Katrina paramedic
story is an example of how the psychological effects of material tools were an enabling
influence on the design of a discussion-based activity. He noted that the narrative story in the
case was so compelling that students had an emotional reaction to the issues presented in the
case. Due to this effect, Etkin had the students take the initial lead for the discussion and
framing of the issues in the case. Etkin later situated and explained these issues from a
theoretical perspective. The material characteristics of tools could also be a direct influence
on the design of activities. For example, Phillips’s case tools for her mini-case activities were
slideshow presentations she created that included photographs from her own research, and
Etkin’s tools for his Grassy Narrows case were existing video clips as well as quotes and
factual notes from a book. Students could not use these kinds of tools independently; rather,
the faculty member used the tools to augment a presentation. While the characteristics of
these tools had a direct influence on the structure of the activity, a characteristic of this type
of structure was that it gives space for the interpsychological engagement of others in
preplanned or spontaneous class discussion about the case and the ideas reflected in the case;
this affordance may or may not be realized in any given activity. Jensen’s approach to the use
of cases in her *Response Theory and Practice* course offers another example of a type of medium-structured activity. As students had completed assigned readings outside of class, the associative relationship between the cases and the ideas reflected in the case has already been established. The goal of the in-class activity was to further the work done by students in their individual reading activity through engagement of students in collaborative construction of metacategory knowledge based on their analysis of the cases. Jensen provided a short lecture on the particular topic for each class prior to guiding students’ discussion and analysis of the cases. As illustrated in these three examples of medium-structured case activities, the associative relationship between the cases and the ideas in the cases were all interpsychologically and tool mediated. A characteristic of all of the medium-structured activities was there was limited prescription of actions and goals.

**Highly structured activities.** Highly structured activities were used to develop students’ knowledge about something, as well as students’ knowledge of how to do something, and thus the function of the case in these activities was for its instrumental value. In contrast to low- and medium-structured activities, highly structured activities had a clearly prescribed set of actions and goals in which students took individual or collective responsibility for different dimensions of the activity; because of the degree of prescription, the designs for these case-based activities can most easily be shared. The actions and goals in highly structured activities were more complex than in low- and medium-structured activities; the complexity was reflected in both the internal and external actions that
comprised the activity. Additionally, all but one of the highly structured case activities used some material form of case tools.\(^{13}\)

There were three primary distinctions between the characteristics of highly structured activities. The first distinction was based on differences in the object of the activity. Activities that were designed to develop students’ knowledge of how to do something were all *simulation-based* activities, whereas those designed to develop students’ knowledge about something were not. Simulation-based activities were all focused on the synthesis and application of knowledge, whereas activities to develop students’ knowledge about something were focused on the social construction of knowledge. Highly structured activities designed to develop students’ knowledge about something required that students look at and analyze a case by looking with and through a prescribed disciplinary lens (e.g., Etkin’s and Phillips’s use of the *At Risk* model), professional practice lens (e.g., Etkin’s and Jensen’s use of the four-phase model), or some combination thereof (e.g., Etkin’s Three Mile Island case that looked at specific aspects of both theory and practice). In contrast to medium- and low-structured activities, the primary responsibility for creating the associative connection between the case and the knowledge frame in highly structured activities was with the students, either as individuals or as a collective.

The second distinction between highly structured activities was the setting for the activity. Some of the highly structured activities were individual or team assignments designed to be completed outside of class or in a collaborative virtual space with minimal instructor participation (e.g., Etkin and Jensen’s four-pillars assignment activities; Kushma’s

\(^{13}\) The exception was McEntire’s ICS simulation. The material tools were limited to the scenario descriptions used by the instructor.
evaluation research case activities). The submission of a final product of some sort was an expected outcome from these activities. Alternatively, highly structured activities could be class-based activities (e.g., Etkin’s Three Mile Island video activity, all of Shaw’s simulation-based activities).

The third distinction in highly structured activities was based on the division of labour. All of the highly structured case-based learning activities gave some or all of the analytic responsibility for constructing the association between the case and the knowledge frame to the students. Some of the activities were individually oriented (e.g., Kushma’s Hurricane Sandy interdisciplinary research proposal activity, McEntire’s terrorist organization assignment), while others were team-based (e.g., Shaw’s media policy, Coast Guard, Pandemic, and Lawnjeray® cases) or class-based activities (e.g., Phillips International course activities; McEntire’s ICS simulation). Some case activities included a mix of these approaches (e.g., Jensen’s undergraduate assignment activity). Table 13 summarizes the characteristics of case-based learning activities based on key differences in their structure.

Table 13

*Characteristics of Case-Based Learning Activity Structures*

<table>
<thead>
<tr>
<th>Activity Structure</th>
<th>Case Elements &amp; Function</th>
<th>Division of Labour</th>
<th>Activity Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Structure</td>
<td>Case and knowledge frame conjoined in one material tool; direct associative relationship between the case and knowledge frame. Function of the case is for its intrinsic or instrumental value.</td>
<td>Independent and intrapsychologically oriented activity.</td>
<td>Assigned out of class reading activity.</td>
</tr>
<tr>
<td>Activity Structure</td>
<td>Case Elements &amp; Function</td>
<td>Division of Labour</td>
<td>Activity Characteristics</td>
</tr>
<tr>
<td>--------------------</td>
<td>--------------------------</td>
<td>--------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>Medium Structure</td>
<td>Case and knowledge frame are separate tools, which may or may not have a material form; direct or indirect associative relationship between the case and knowledge frame. Function of the case is for its intrinsic or instrumental value.</td>
<td>Class-based interpsychologically mediated activity; responsibility for constructing associative relationship between case and knowledge frame may be with instructor or students as a collective.</td>
<td>In-class presentation or discussion-based activities. Limited prescription of actions and goals, activity characteristics reflect tools, division of labour, and faculty members’ pedagogical beliefs and practices.</td>
</tr>
<tr>
<td>High Structure</td>
<td>Case and knowledge frame are separate tools; indirect associative relationship between the case and knowledge frame. Function of the case is for its instrumental value.</td>
<td>Individually oriented or team-based out-of-class assignment activity, or team- or class-based in-class activity. Students have responsibility for constructing the associative relationship between the case and knowledge frame.</td>
<td>In-class or out-of-class activity. Clearly prescribed sequence of actions and goals.</td>
</tr>
<tr>
<td></td>
<td>Case and problem frame may be conjoined or separate tools. Function of the case is for its instrumental value.</td>
<td>Individually oriented assignment activity, or team-based in class activity.</td>
<td>Simulation-based activity.</td>
</tr>
</tbody>
</table>

**Length of activities.** The length of the activities also distinguished the structure of case-based learning activities. The simplest and shortest form of case-based learning activity was the use of a verbal example, such as McEntire’s quick explanation of timing of the 9–11 plane crash in the morning. The longest form of an activity was Phillips’s *International* course, which she referred to as a case-based course. Within that course Phillips included different types of case-based activities, with each addressing different learning needs. One
was students’ use of the *At Risk* model to analyze each of the three cases studies in the course. Another was the analysis of what is empirically known about specific dimensions of emergency management practice as exemplified by each of the events (e.g., mass fatality, shelter issues). While no other courses examined within this study were framed as case-based courses, there were other examples of patterns in the use of cases across a given course. Examples include McEntire’s approach to the use of cases in his *International Disasters* course, and Jensen’s approach to the use of cases within her *Response Theory and Practice* course. Within these courses, each faculty member examined multiple cases within each class, and their approach to looking at the cases was consistent across the length of the course. In other courses, a case-based learning activity could be a discrete activity within a given class. Examples of these types of activities included Shaw’s simulation activities, which were completed within a particular evening class, and some of Etkin’s activities, such as the Three Mile Island video analysis case. From an activity theory perspective, case-based learning activities are distinguished based on the object of an activity, which can be broadly or narrowly defined. The object of activity in a given class could be multimodal and theoretically comprised of several separate activities, or an object of an activity could such that a single activity spanned several classes. Phillips’s case-based course had both of these activity characteristics. The distinctions between the characteristics of case-based learning activities determined by the object of the activity will be examined in the next section.

**Characteristics of activity designs based on the object of activity.** This section will describe the patterns related to how faculty members used cases to develop students’ knowledge (a) about a specific case, (b) about something else, and (c) of how to do
something. Patterns in the characteristics of activities with hybrid objects will also be described.

*Activity designs to develop knowledge about specific cases.* There were two main variants in the activity designs for developing students’ knowledge about a specific case. The difference was based on whether the use of a case was a *preplanned* or a *spontaneous* activity. There were three examples of how faculty members used cases for their intrinsic value in preplanned activities. The cases and case tools were (a) Freudenburg et al.’s (2009) study of the “engineering of Katrina” in Phillips’s *Mitigation* course, (b) the 9–11 *Commission Report* (National Commission on Terrorist Attacks Upon the United States, 2003) in McEntire’s *Terrorism and Homeland Security* course, and (c) the Samuel Prince study of the 1917 Halifax explosion in Jensen’s *Response Theory and Practice* course. All of these cases were in-depth studies about disaster events in which the case description and knowledge frame for the cases were conjoined. While Phillips and McEntire both made reference to the intrinsic case readings in their classes, there was no prescribed structure for any subsequent discussion-based activity. In contrast, Jensen’s approach to the use of the Samuel Prince case had a clearly prescribed structure, which reflected the intrinsic value of the case as being the first systematic sociological study of a disaster. The particular value of the case was reflected in the characteristics of the activity design. In addition to reading the case, Jensen asked students to (a) *select* a concept or finding presented in the case, (b) *conduct* a literature review examining how what is known has changed over time, (c) *assess* the strength of the literature reviewed, and (d) *discuss* the implications of the literature reviewed for practice. The rules for the activity reflect academic norms related to the number of references required for a literature review activity. As illustrated, Phillips’s
and McEntire’s case-based activity designs were low structured, with some level of subsequent medium-structured activity, whereas Jensen’s case activity was high structured.

There were two examples of how faculty members spontaneously used cases as the object of study in a course: (a) Phillips’s use of the second plane crash case in her undergraduate course on mitigation and recovery, and (b) Waugh’s use of current events such as the Haiti earthquake or Hurricane Katrina in his courses. These examples illustrate that both local and international events can become the object of study. In the plane crash case, Phillips linked the discussion about the event and its local impact back to the course material and discussions about the psychosocial impact of disasters and what is known about how to recover from them. Waugh’s approach to the use of the Haiti and Katrina cases was to draw from his extensive library of teaching materials related to different types of hazards to construct a slideshow presentation that helped to frame discussion about the case. The samples of the case tools Waugh provided reflected that he also used materials about the current events that were publicly available at the time. Phillips’s and Waugh’s activity designs were medium-structured interpsychologically mediated activities.

Table 14 summarizes the characteristics of activity designs to develop students’ knowledge about specific disaster events. These characteristics are reflective of the case-based learning activity designs examined in this study, and may or may not be reflective of the potential ways of using intrinsic cases in learning activities.
Table 14

*Characteristics of Activities Designed to Develop Knowledge About a Particular Case*

<table>
<thead>
<tr>
<th>Characteristics of Activities</th>
<th>Preplanned Use of Cases</th>
<th>Spontaneous Use of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Case tools characteristics</strong></td>
<td>Cases are historical events, and the case and knowledge frame are conjoined in one material tool, which reflects the in-depth study of a case from a particular disciplinary or professional practice perspective</td>
<td>Cases are current events, and the case and knowledge frame are separate tools, which may or may not have a material form</td>
</tr>
<tr>
<td><strong>Division of labour characteristics</strong></td>
<td>Individually oriented assignment-based activities</td>
<td>Collectively oriented class-based activities</td>
</tr>
<tr>
<td><strong>Rule characteristics</strong></td>
<td>Clearly prescribed rules</td>
<td>Rules for making inferences from cases</td>
</tr>
<tr>
<td><strong>Activity design characteristics</strong></td>
<td>Low-structured tool mediated individually oriented, with supplemental medium-structured discussion-based activities</td>
<td>Medium-structured and interpsychologically mediated activities in which the faculty member plays a significant role in framing the discussion about the case</td>
</tr>
<tr>
<td></td>
<td>Highly structured activities, which begin with reading of a case and include additional prescribed actions and goals</td>
<td></td>
</tr>
</tbody>
</table>

*Activity designs to develop students’ knowledge about something else.* The object of these activities was to develop students’ knowledge about some aspect of human experience with hazards and disasters as well as emergency management practice. In addition to variations in the type of knowledge (e.g., conceptual, procedural) developed in case-based learning activities, there was a difference in the depth of knowledge to be developed. The difference in depth of knowledge developed was a function of (a) the characteristics of the case tools (e.g., journal article vs. book), and (b) the characteristics and numbers of actions and goals (e.g., instructor presentation vs. assignment-based activity). Regardless of the type
or depth of knowledge developed, the function of the two psychological dimensions of the case tools (i.e., case and knowledge frame) remained the same. In addition to using cases to develop students’ knowledge about something, faculty members’ also used cases to assess students’ knowledge about something. The inclusion of an assessment component was a characteristic of individual or team-based assignment activities in which the actions included having students submit or present something, whereas assessment of class-based activities was limited to and included in evaluation of participation in a course.

Through cross-case analysis of the case-based learning activity designs, three types of activity designs for developing students’ knowledge about something were identified. The first approach to the use of cases to develop students’ knowledge about something was the spontaneous use of cases to illustrate something. The spontaneous use of cases for their illustrative value reflected that the instrumental use of cases to explain something had become a condition, which was related to a perceived need or request to provide an example of a phenomenon. McEntire was the only faculty member to comment on the fact he recognized the spontaneous use of cases had become a pattern in his teaching; this recognition occurred during one of the interviews for this study. All other case activities to develop students’ knowledge about something were preplanned. Preplanned activities were in-class or out-of-class activities, or a combination of these approaches. Out-of-class activities were either individual or team-based assignment activities that had a clearly prescribed structure and were mediated through the use of material tools. Out-of-class activities included low and highly structured activities. Low-structured reading activities were individually oriented, whereas highly structured activities could be individually oriented (e.g., McEntire’s assignment about terrorist organizations) or team-based
(e.g., Jensen’s undergraduate assignment) activities. In-class activities were either medium (e.g., Waugh’s case activities) or highly structured activities (e.g., Etkin’s Three-Mile Island video case activity).

A key distinction between the medium and highly structured preplanned activities was the division of labour for mediating the associative relationship between the case and the knowledge frame for the case. In medium-structured activities this was primarily the responsibility of the faculty member, whereas in highly structured activities this was primarily the responsibility of the student. From a theoretical perspective, these differences in the design for the division of labour in an activity result in varied approaches to the social construction of knowledge. Table 15 summarizes the characteristics of case-based learning activities designed to develop students’ knowledge about hazards, disasters, and emergency management practice.

Table 15

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Preplanned use of cases</th>
<th>Spontaneous Use of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In-Class Activities</td>
<td>Out-of-Class Activities</td>
</tr>
<tr>
<td>Case tools</td>
<td>Case and knowledge frames are separate tools, which may or may not have a material form</td>
<td>Case and knowledge frames are conjoined in one material tool, or are separate material tools</td>
</tr>
<tr>
<td>Division of labour</td>
<td>Instructor presentation, which may or may not include discussion-based activities; student-led discussion about a case</td>
<td>Individual or team-based activities</td>
</tr>
</tbody>
</table>
| Rule | Participation and disciplinary rules.  
Timing rules if readings are assigned before class activity | Timing, participation, assignment, disciplinary, and institutional rules | Disciplinary rules |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity design</td>
<td>Medium-structured presentation or discussion-based activities</td>
<td>Low-structured reading activities</td>
<td>Medium-structured discussion-based activity</td>
</tr>
<tr>
<td></td>
<td>Highly structured individually or team-oriented activities</td>
<td>Highly structured assignment activities</td>
<td></td>
</tr>
</tbody>
</table>

**Activity designs to develop students’ knowledge of how to do something.** Activity designs to develop students’ knowledge of how to do something were all simulation-based and highly structured activities. The knowledge dimension of these activities included knowledge of what professionals or researchers do (i.e., the object of their professional activity), as well as how professionals work, from both a technical and social perspective. Some of the activities to develop students’ knowledge of how to do something were specifically designed to support development of these competencies (e.g., Shaw’s simulation activities), while other activities were designed to assess these competencies (e.g., Kushma’s interdisciplinary research activity). All of the activities to develop students’ knowledge of how to do something were preplanned, and the setting for the activities was either in a face-to-face class or an online environment.

All of the simulation-based activities, with the exception of one,\(^{14}\) included the use of material tools. The psychological dimensions of the tools (i.e., case and problem frame) were:

\(14\) The exception was McEntire’s ICS simulation, which was verbally mediated.
could be distinct material tools or conjoined in one material tool. The use of a single tool was limited to activities were the tool had been specifically designed to support a simulation-based activity (e.g., media policy article, Lawneray® case). In other activities, the faculty member created tools specifically for the activity (e.g., Shaw’s Hindcasting case activity) or used tools that had been designed for another purpose (e.g., Kushma’s Hurricane Sandy interdisciplinary research case activity). Additionally, the faculty member could verbally present the problem frame for an activity (e.g., Shaw’s Coast Guard case and LaSalle Bank case). This occurred when faculty members adapted tools designed for another purpose for use in a simulation-based activity.

A characteristic in the division of labour for activities designed to develop students’ knowledge about something was that students were assigned to work in teams. Faculty members’ reasoning for the use of teams was that it emulated the conditions of professional practice, and thus the activity supported the development of these types of competencies. The exception to the use of teams in simulation-based activities was in two of Kushma’s research simulation-based activities, which were individual assessment activities. Nonetheless, the characteristic of the division of labour was still reflective of the nature of the activity, as research can be an individual or collective activity. Another characteristic of the division of labour in simulation-based activities was that students took on specific roles in relation to the case and problem within the case. In some activities roles within a team were distributed (e.g., Shaw’s Lawneray® case), while in others students worked individually or in teams but all took on the same role (e.g., Shaw’s media policy case; Kushma’s research cases). As illustrated, the division of labour in a simulation-based activity was reflective of the characteristics of the particular object of the activity.
The simulation-based activity designs shared a common core activity structure. Students were provided with background information about a case, which included the description of a problem. Students analyzed the case and developed an approach to dealing with the problem. With the exception of individually oriented assignment-based activities, students presented their approach to dealing with the problem as well as compared and critiqued alternative perspectives. The last set of actions in this activity reflected the characteristics of problems in the DEM field and in research activities, which are that there is no one right way to deal with a problem, rather there are best approaches. All of the simulation-based activities were a variation of this structure, which is similar to the structure of case-based learning activities in business programs. A characteristic of all of the simulation-based activities was they were preplanned. Table 16 summarizes the characteristics of case-based learning activities designed to develop students’ knowledge of professional practice and research methods.

Table 16

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>In-Class Activities</th>
<th>Out-of-Class Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case tools characteristics</td>
<td>Case and problem frame may be conjoined or separate tools, and may or may not have a material form</td>
<td>Case and problem frame may be conjoined in one material tool, and may be separate material tools</td>
</tr>
<tr>
<td>Division of labour characteristics</td>
<td>Team-based activities with the instructor facilitating the activity</td>
<td>Individual or team-based activities</td>
</tr>
<tr>
<td>Rule characteristics</td>
<td>Participation and disciplinary rules</td>
<td>Timing, participation, assignment, disciplinary, and institutional rules</td>
</tr>
<tr>
<td>Activity design characteristics</td>
<td>Problem and simulation-based activities</td>
<td>Problem and simulation-based activities</td>
</tr>
</tbody>
</table>
While some of the case-based learning activities examined in this study only focused on developing or assessing students’ knowledge of how to do something, other activities were designed to develop students’ knowledge of how to do something as a means of developing their knowledge about something. This is one of two types of hybrid case activities that were identified in the conduct of this study.

**Hybrid activity designs.** Hybrid designs were ones in which the objects reflected multiple needs and motives. There were two types of hybrid designs. The first type reflected multiple learning needs and motives, which were all associated with one type of knowledge (i.e., knowledge about or knowledge of something). For example, in Phillips’s *International* course, the activity was designed to develop students’ knowledge about (a) theory of the root causes of disasters, (b) the implications of this theory for practice, (c) different dimensions of professional practice, and (d) research methods used to examine practice. In this activity, the same set of cases was used to develop students’ knowledge about these different things.

In the second type of hybrid activity there were also multiple knowledge goals; however, the goals related to the development of different types of knowledge. The objects of two of Jensen’s case-based learning activities had this characteristic. In one of the activities, she developed students’ knowledge about recovery progress in communities after flooding by having them analyze the content of media reports about the flooding, and then compare their findings to other empirical findings about what is known about recovery progress after a disaster. The object and design of the activity included development of students’ knowledge of content analysis as a research method as a means for developing students’ knowledge about the progress of recovery after a disaster. The object of her live functional needs case was also a hybrid and multimodal object. Again, the activity was designed to develop
students’ knowledge of research methods as a means of developing their knowledge about organizational preparedness as it pertained to populations with functional needs. These examples of hybrid activities reinforce the activity theory proposition that objects distinguish activities, as well as Kaptelinin and Nardi’s (2009) assertion the object of a given activity can reflect multiple needs and motives.

**Discussion About Why and How Faculty Members Use Cases in Their Teaching**

The three analytic perspectives that informed the interpretation of why and how study participants used cases in their teaching were (a) activity theory (b) Stake’s (1995) framing of the types and functions of cases in case-based research methods, and (c) Scardamalia and Bereiter’s (2006) distinction between knowledge about and knowledge of something. A summary of this interpretation, which provides a response to the first research question, is presented in this section. This method of interpreting how and why faculty members used cases in their teaching will then be compared and discussed in relation to established case-based learning methods used in other professionally oriented fields of study, as well as in relation to two existing typologies for classifying case- and problem-based learning methods.

The findings of this study were faculty members used cases in their teaching as both objects and tools. The function of a case as an object was for its intrinsic value; the objects of these case activities focused on developing students’ knowledge about a particular case. In contrast, the function of a case as a tool was for its instrumental value. The instrumental function of a case as a tool could be further differentiated based on the object of a case-based learning activity. One instrumental function of a case was to develop students’ knowledge about something, and the other was to develop students’ knowledge of how to do something. Thus, there were three main reasons for using cases, which also distinguished between
faculty members’ approaches to how they used cases in their teaching in DEM postsecondary programs.

Within each of the three main functional reasons for the use of cases in learning activities, additional patterns in faculty members’ approaches to the design of case-based learning activities were identified. These patterns related to the characteristics of cases and case tools, division of labour, rules, and activities structures, as they were manifest in the learning activity designs associated with the three different types of objects of case-based learning activities. These patterns give insight into the current practice of using cases in DEM postsecondary programs. In this regard, faculty members’ pedagogical practice with regard to the use of cases is of instrumental value. These finding about why and how faculty members used cases in their teaching will now be discussed in relation to other established methods for using cases in professionally oriented post-secondary programs.

**Comparison with established case- and problem-based learning methods.** As discussed in Chapter 2, current practices related to the use of cases in teaching in professionally oriented programs of study can be traced back to the use of the case method for teaching law at Harvard in the 1870s (Garvin, 2003). The object of the legal case method was to develop students’ knowledge about the core principles underpinning laws. The best tool for doing this was deemed to be the study of original legal cases that influenced the development of legal principles and laws. The selection criteria for legal cases reflects the use of cases for their intrinsic value, and thus the function of cases in law program pedagogy is as an object. However, the method of learning from legal cases also reflects the instrumental value of cases as tools in developing students’ legal reasoning competencies. Thus, in the legal case method, cases function as both objects and tools and fulfill different
types of learning needs. Based on the constructs developed in the conduct of this research study, the use of legal cases is a hybrid approach to the use of cases, in that two different functional uses of cases are integrated in one learning activity. In contrast to the approach to the use of cases in business and medical programs, the legal case method is not a problem-based method. The cases are complete, and the object of the activity is to learn about a particular case as well as the reasoning within a case.

In this research study, faculty members also identified the need for students to learn from specific cases because of their intrinsic value; however, the value of particular DEM cases was not due to their significance as a precedent, but rather because of an event’s broader social significance and opportunity for learning. In contrast to the activity structure for legal cases, the focus of learning with intrinsic cases in DEM programs was limited to developing students’ knowledge about the particulars of a case and the cases were not used as tools for developing students’ professional competencies. The characteristics of how DEM faculty members used cases in their teaching also bore similarity to the use of cases in business programs.

Several decades after the establishment of the case method in law programs at Harvard, the case method was adapted for use in business programs at Harvard (Cruikshank, 1987). This method was rapidly taken up by business programs in other universities, with the expansion of the business-case method supported by the development of casebooks, the first of which was published in 1920 (Garvin, 2003). In the adaptation of the legal-case method, the function of the case in learning activities changed. The primary function of business cases was for their instrumental value in developing students’ business acumen. The method for developing these competencies reflects the use of a case as a problem to solve, and, in
contrast to the legal case method, the decision made in the actual case is not presented to students (Garvin, 2003). This approach to teaching with cases was initially called “the ‘problem’ method” (Cruikshank, 1987, p. 78), which helped to distinguish from it from the case method used in law schools. However, in 1922 when the first ‘casebooks’ were about to be published the decision was made to use the term “case method” (Cruikshank, 1987, p. 174), rather than “problem method” (Cruikshank, 1987, p. 174). While the method of using cases in business programs is called the case method, from a functional point of view it is a problem-based variant of case-based learning methods.

In this research study, faculty members’ practices of using cases to develop students’ knowledge of how to do something in the DEM field most closely reflected the culturally established practice of using cases in business programs. The approach to the use of cases in DEM and business programs reflects similarities between the interpretations of the objects of professional activities in these different fields. The object of professional practice in the business field was described as “making and implementing decisions, often in the face of considerable uncertainty” (Garvin, 2003, p. 60). Faculty members’ collective view of the primary object of DEM practice was the need for professionals to be able to facilitate collective decision making with different stakeholder groups in a range of situations pertaining to human experience with hazards and disasters. These decisions are also often made in conditions of uncertainty. The learning needs reflected in faculty members’ approaches to the design of case-based learning activities in DEM programs were the development of competencies relating to what professionals do and how they work. The characteristics of what professionals do were reflected in the object and associated goals of case-based learning activities, while the characteristics of how professionals work were
reflected in the psychological and material tools, division of labour, rules, and structure for a learning activity. Attention to developing competencies in how professionals work, while being characteristic of DEM cases, does not appear to be a defining attribute of business cases. The need to develop competencies related to how professionals work in DEM programs reflected faculty members beliefs about the types of competencies needed in DEM practice (e.g., need to collaborate with others, attend to diverse perspectives of stakeholders, and develop consensus).

Another established variant of the use of cases in professionally oriented academic programs of study is the PBL method,¹⁵ which has been used in medical schools at McMaster (Barrows & Tamblyn, 1980), Harvard (Garvin, 2003; Tosteson, 1979), and other universities (Garvin, 2003). The PBL method reflects the use of cases for their instrumental value in developing students’ professional competencies. While the functional approach to the use of cases in both business and medical programs is as problems to solve, there are distinct differences between the needs and motives, as reflected in the object of the case-based learning activities. In business programs, the learning need associated with the use of cases is for students to be able to make decisions in conditions of uncertainty. In contrast, multiple needs and motives are reflected in the approach to the use of cases in medical schools. Motives included the need for students to develop (a) an integrated knowledge base structured in a way that supports clinic practice, (b) clinical reasoning skills, and (c) the ability to acquire new information through self-directed learning (Barrows, 1996; Tosteson, 2003).

¹⁵ Savin-Baden and Howell Major (2004), in their book Foundations of Problem-Based Learning, suggested the construct of PBL originated with the practice established in medical schools at McMaster and other universities in the late 1960s and early 1970s. However, the term “problem method” (Cruikshank, 1987, p. 74) was used by the Dean of the Harvard Business School in 1908 to describe the method of learning from cases in business.
The beliefs that informed the use of PBL in medical schools led to this method becoming the foundation of the curriculum in many medical schools. While there were no examples of the use of the PBL structure for learning from cases in the case-based learning activities examined in this study, in my own teaching practice I have experimented with the PBL method as used in medical schools and found the method to be of value. In a forthcoming article (Slick, in press), I explain my approach to developing and using a multiday case-based learning activity that is founded upon the established PBL structure. While this methodology does not underpin the curriculum design, as it does in medical schools, I would nonetheless argue that it is effective as a standalone learning activity. In addition to comparing the patterns in faculty members’ use of cases in the DEM field to the practice for the use of cases in other professional fields of study, the patterns can also be discussed in relation to existing schemas for conceptualizing the use of cases in learning activities in post-secondary programs (e.g., Barrows, 1986; Jonassen, 2011; Kim et al., 2006).

**Comparison with established systems for classification of case- and problem-based learning.** An assumption at the outset of this study was faculty members’ approaches to the use of cases in their teaching could be classified based on one of Jonassen’s six functional reasons for using cases. This assumption was made because Jonassen’s schema appeared to account for existing established case-based learning methods. The use of activity theory in this study helped to surface some of the limitations of Jonassen’s schema. Other extant models for classification of case- and problem-based learning methods were then reviewed and considered as alternative frames for conceptualizing how and why cases were used in this study (e.g., Barrows, 1986; Kim et al., 2006). These frames were also found to
have limitations. This concluding discussion will describe Barrows’s (1986) and Jonassen’s (2011) taxonomies for the classification of case-based learning methods and discuss the limitations of these conceptual frames.

Barrows’s (1986) taxonomy distinguishes between six case- and problem-based learning methods: lecture-based cases, case-based lectures, case method, modified case-based methods, problem-based methods, and closed-loop or reiterative problem-based methods. Each of the six methods is classified based on (a) the degree to which a method is teacher versus student directed, and (b) the degree to which a case includes or does not include a problem-based simulation. Each of the six methods are also rated based on the degree to which they met four core educational objectives in medical schools, which from an activity theory perspective reflect the needs and motives of these programs of study. The only learning method that was deemed to fully address all four medical educational objectives was the closed-loop problem-based method.

As illustrated in Table 17, all six of Barrows’s case- and problem-based learning methods related to the instrumental use of cases to develop students’ knowledge about something or knowledge of how to do something. Thus, a limitation of Barrows’s (1986) taxonomy is that it did not take into account the intrinsic use of cases and the need to develop students’ knowledge about a particular case. Further, while Barrows (1986) taxonomy took into account division of labour as a key variable, the three methods that Barrows (1986) associated with the use of a partial or full problem simulation (i.e., modified case-based method, problem-based method, and closed-loop problem-based method) were the only ones in the taxonomy being associated with “student-directed learning” (p. 483). However, as the findings of this study demonstrate, the division of labour in case-based activities to develop
students’ knowledge about something may give primary or full responsibility to the student. Thus, another limitation of Barrow’s (1986) taxonomy is that it is based on the assumption that certain types of case methods can only be teacher directed. Barrows’s (1986) typology can be contrasted with the more recent approach to the classification of case- and problem-based learning methods developed by Jonassen (2011).

Table 17

**Analysis of Barrow’s (1986) Classification of Case- and Problem-Based Methods**

<table>
<thead>
<tr>
<th>Object characteristics</th>
<th>Associated type of case method</th>
<th>Division of labour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development of knowledge about something</td>
<td>Lecture-based cases</td>
<td>Teacher-directed</td>
</tr>
<tr>
<td></td>
<td>Case-based lectures</td>
<td>Teacher-directed</td>
</tr>
<tr>
<td></td>
<td>Case-method</td>
<td>Partially student &amp; teacher directed</td>
</tr>
<tr>
<td>Development of knowledge of how to do something</td>
<td>Modified case-based method</td>
<td>Student-directed</td>
</tr>
<tr>
<td></td>
<td>Problem-based method</td>
<td>Student-directed</td>
</tr>
<tr>
<td></td>
<td>Closed-loop problem-based method</td>
<td>Student-directed</td>
</tr>
</tbody>
</table>

Jonassen’s (2011) schema for explaining case- and problem-based learning methods is based on his premise that “cases are the building blocks of problem-solving learning environments” (p. 146). He defined a case as being “an instance of something” (Jonassen, 2011, p. 150) and a problem as being “a question or issue that is uncertain and so must be examined and solved” (p. 1). Jonassen (2011) suggested there are two dimensions to problem solving; the first, as the term implies, is conceptualizing the problem, and the second is construction of a solution to the problem. In his schema, Jonassen (2011) classified six different approaches to the use of cases in problem-solving learning activities, and these methods are clustered into four groups (see Figure 5). Jonassen (2011) devoted a separate chapter in his book on *Learning to Solve Problems* to describing each of the six approaches.
to the use of cases in some detail. While five of the approaches to the use cases Jonassen (2011) described were primarily associated with development of knowledge about how to solve problems (i.e., worked examples, case studies, structural analogues, prior experience, and alternative perspectives), he made reference in each of his chapters about how all of the different functional approaches, with the exception of worked examples, could also be used to develop students’ knowledge of how to solve problems. Thus, while he argues that the purpose or function of case methods, not their form or content, is a key distinction, his functional analysis of cases does not take into account the difference between the objects of case activities, or the difference between the function of cases as objects and tools (Jonassen, 2011).

![Figure 5. Jonassen’s schema for classifying the function of cases as problems to solve.](image)


As this discussion suggests, methods of using cases in teaching have a long tradition in professionally oriented and academically based programs of study. The development of case-based learning methods in the legal, business, and medical fields has a shared history. The development was motivated by the desire to improve educational outcomes, including
the aim to better prepare students for a life of professional practice. Over time, scholars have developed different schema for conceptualizing the use of cases in teaching, which include problem-based case methods (Barrows, 1996; Jonassen, 2011). Just as there is no one method of using cases in teaching, no one overarching model can explain the use of cases and problems in teaching; rather, different models offer different perspectives. A limitation of two of the extant models reviewed is that they do not account for the use of cases for their intrinsic value, despite the long history of this practice in legal programs, where the precedent for the use of signature approaches to the use of cases in professionally oriented programs was first developed.

Another limitation within the literature related to the use of cases in postsecondary programs relates to the assumptions about what the terms case- and problem-based learning mean. While the approach to the use of cases in business and medical schools differ, from a functional standpoint they are both problem-based case methods. However, the use of cases in business schools is referred to as the case method, while the use of cases in medical schools is called the problem-based learning method. While there are distinction between the use of case methods in these two fields of study, the distinction are primarily related to differences in the original interpretation of the characteristics of expertise within each field of study, and the implication of this for the design of case-based learning activities. This difference in terminology leads to confusion about the functional differences between these methods.

In the conduct of this research study, no assumption was made about what constituted a case method; rather, the purpose was to explore how DEM faculty members used cases in their teaching. The theoretical framework for this study provided a particular lens for
examining faculty members’ reasons for using cases and their practice with regard to the use of cases. An affordance of this lens was that it shed light on the differences between the functions of cases as objects and tools as well as on the two instrumental functions of cases within learning activities. Thus, a product of this study is an alternative frame for conceptualizing the function of cases in learning activities, which draws from activity theory, as well as the literature on case-based research and Scardamalia and Bereiter’s (2006) distinction between knowledge types.

**Summary of How and Why Faculty Members Use Cases in Their Teaching**

Faculty members’ reasoning for why they use cases in their teaching was due to their instrumental as well as intrinsic value. Faculty members’ reasons for the instrumental use of cases was framed in relation to (a) the needs of students as subjects, (b) the intended learning outcomes as framed by the object of case-based activities, and (c) the function of cases as signs and tools in mediating students’ learning and development relative to the object. Faculty members’ reasoning why they use cases for their instrumental value was grounded by their beliefs about students’ ways of knowing and how students learn. Students’ starting points, particularly their lack of experiential knowledge related to the phenomena that were the object of study in courses, was a condition for the use of cases. Faculty members’ beliefs about the effects of cases as signs and tools were framed in relation to their different intentions with regard to the use of cases in their teaching. Their intentions with regard to the use of cases related to the development of students’ knowledge about and knowledge of human experience with disasters and DEM practice. Faculty members’ intentions also included the development of knowledge about specific cases that were perceived to be significant locally, as well as nationally or globally. These different reasons why faculty...
members use cases in their teaching were found to be a craft-based form of knowledge developed through their own experiences with teaching and learning. In this regard, while I found common patterns in reasoning about why faculty members used cases in teaching, these reasons were personal.

Faculty members’ approaches to how they used cases in their teaching reflected their different beliefs about how students learn from cases. The three primary approaches to the use of cases as examined in this study were to support development of students’ knowledge about a particular case, general knowledge about something else, and knowledge of how to do something. Some activities had hybrid objects, which integrated at least two of these different reasons for using cases in teaching. In addition to distinguishing between the characteristics of the objects of case-based learning activities, I found patterns in the characteristics of cases and case tools. The primary distinction between case tools was based on the psychological functions of the tools in case activities. Case tools in activities to develop students’ general knowledge about something or knowledge about a specific case were the same, and included a case description and a knowledge frame. Case descriptions and knowledge frames could be separate or conjoined tools, and each of these dimensions of the tools could be framed from different perspectives. Case tools in activities to develop students’ knowledge of how to do something included a case description and a problem frame. These could also be separate or conjoined tools, and could also be framed from different perspectives. There were also patterns in characteristics of the two other mediating elements in a learning activity system, which are the rules and division of labour. In addition to these patterns in the elements of a learning activity, as a system, I found patterns in the structure of case-based learning activities. Case-based learning activities, regardless of their
function, included low, medium, and highly structured activities. Furthermore, I found distinct patterns in the structures of activities based on the object of case-based learning activities. These patterns reflected differences in the functions of cases in learning activities.

Faculty members’ reasons for and approach to the use of cases were compared to signature methods for using cases in other professionally oriented fields of study. Faculty members’ practices related to the use of cases as examples to develop students’ knowledge of how to do something was found to be similar to the approach to the use of cases in business schools. In addition, while the nature of what constituted a case and methods for teaching with cases in DEM program differed from the practice in law schools, law programs also used cases for their intrinsic value. While the use of cases for their intrinsic value has been in practice for over a century, existing typologies related to the use of case-based learning methods (Barrows, 1986; Jonassen, 2011) have not made the distinction between the intrinsic and instrumental reasons for using cases in teaching. I found literature on case-based research to be of value in establishing theoretical differences for the use of cases for their intrinsic and instrumental value and for distinguishing between the function of a case as an object and as a tool in a learning activity system. A distinct difference between the approach to the use of cases in DEM postsecondary programs, when compared to the practice in law, business, and medical school programs, was the use of cases to develop students’ knowledge about something. Barrow (1986) recognized this functional approach to the use of cases in his typology for the use of cases in teaching; however, he classified this as a teacher- rather than student-centred method. The findings from this study suggest that the division of labour is one of several variables in the approach to the use of cases to develop students’ knowledge about something, rather than an inherent characteristic of the approach to the use of cases for
the instrumental function of developing students’ knowledge about something. The conceptual framework for understanding why and how faculty members used cases in their teaching, which draws from both emic and etic perspectives, provides the foundation for the development of an empirically based and theoretically grounded instructional design framework and design principles for the use of cases in teaching in DEM higher-education programs, which was another goal of this study.
Chapter 6: Cultural-Historic Influences on the Design of Case-Based Learning Activities

This chapter provides an answer to the second research question: What cultural-historic influences are reflected in the characteristics of faculty members’ case-based learning activity designs? This question was informed by the activity theory principles of multivoicedness and historicity. The four types of social agents identified as having a potential influence on the characteristics of case-based learning activities were the faculty member, the institution in which they worked, disciplines that have informed DEM as a field of study, and DEM as a profession. Each of these agents was understood to have delegated agency, needs-based agency, and to have conditional effects (Kaptelinin and Nardi, 2009). Given that needs are understood to arise from prior activity (Leont’ev, 1974), it was presumed that learning activity designs in some way reflected the history of each of the different types of agents. Through cross-case analysis of the characteristics of faculty members’ case-based learning activities, I identified patterns in the pathways of influence of each of the four agents on the learning activity designs. Patterns in the pathways and findings related to historical antecedents are described in this chapter, and then discussed in relation to relevant literature. An answer to the question about the cultural-historic influences on the characteristics of case-based learning activities examined in this study is offered at the end of this chapter.

Faculty Member Influences

Consistent with the norms of academic institutions, most faculty members participating in this study indicated they had choice about which courses to teach. In many instances the courses were directly aligned with faculty members’ particular areas of interest and expertise. For example, Phillips taught a course on Social Vulnerability and McEntire
taught a course on *International Disasters*. The topics of these courses reflected faculty members’ personal life and educational experiences. While faculty members had primary agency in designing courses, the university delegated this agency. None of the course syllabi reviewed in this study made reference to institutionally defined program-level learning outcomes; rather, the syllabi reflected faculty members’ interpretation of students’ learning needs within a particular course and program of study. Thus, what students learn in a given program of study appears to be strongly influenced by faculty members’ agency in designing a course.

Within a course, faculty members’ influence was reflected in the design of their case-based learning activities, and was seen in (a) the framing of objects, which reflected their beliefs about what students need to learn, as well as how students learn; (b) the selection of cases and case tools; and (c) the activities structures for learning activities, including division of labour and rules. The influence of faculty members on these different elements of a learning activity system is captured in Figure 6. Examples of these different pathways of faculty members’ influence are discussed in this section.


Figure 6. Faculty member influences on case-based learning activity designs

*Note.* DEM = Disaster and Emergency Management.

**Influence on the characteristics of objects.** Through cross-case analysis of faculty members’ different approaches to the use of cases in their teaching, I found distinct individual patterns in the characteristics of the objects of their case-based learning activity designs. For example, all of the objects of Shaw’s and Kushma’s case-based learning activities focused on development of students’ knowledge of how to do something, whereas all of the objects of Waugh’s, Etkin’s, and Phillips’s activities focused on development of students’ knowledge about something. Jensen was the only faculty member whose case activities developed students’ knowledge of research methods as a tool for developing their knowledge about something else. These strong individual patterns in the characteristics of the objects of faculty members’ case-based learning activities appear to reflect differences in their (a) beliefs about the collective motives in DEM postsecondary programs of study and thus what students should learn; and (b) pedagogical beliefs about how cases mediate students’ learning. For example, Shaw described DEM as being a management science, the
object of his case activities were all focused on developing students’ knowledge of how to do something, and his beliefs about how cases mediated learning were related to competency development. In contrast, Etkin viewed DEM as a being an academic program of study, the objects of all of his case-based learning activities were focused on developing students’ knowledge about something, and he believed cases were tools for bringing abstract concepts to life.

While these examples illustrate faculty member influence on the characteristics of the objects of case-based learning activities, Shaw’s and Etkin’s views appeared to align with the views of DEM as a field of study held by the department in which the DEM program was situated in their university. However, other faculty members’ views of DEM as a field of study (e.g., Phillips) did not appear to align with the views of the departmental home of the DEM program in which they worked. In this regard, the cultural characteristics of the DEM program at a university, which in turn reflect the particular history of development of the program, may or may not be mediating influence on the objects of case-based learning activities.

**Influence on the characteristics of case and case tools.** The function of cases in learning activities was relative to faculty members’ intentions, as reflected in the objects of the activities. The function of cases in learning activities was clearly influenced by faculty members’ beliefs about how cases mediate students’ learning. While there were patterns across faculty members’ beliefs about how cases mediate learning (e.g., Waugh and Etkin both said cases bring abstract concepts to life for students), their reasons were personal and framed in relation to their own history of teaching and learning experiences.
While the object of a case activity delimited faculty members’ selection of cases for their instrumental value, selection of cases was further influenced by (a) faculty members’ knowledge of cases, which could be direct (e.g., Shaw’s Coast Guard case, Phillips’s mini-cases based on her own research) or indirect (e.g., Etkin’s selection of cases he had read about); (b) the value faculty members placed on certain cases (e.g., Etkin’s selection of the Grassy Narrows case because of his moral outrage, Shaw’s selection of the LaSalle bank case because it was an exemplar case); and (c) faculty members’ beliefs about the how the attributes of certain cases supported students’ learning (e.g., Phillips’s use of current cases, Kushma’s preference for the use of professionally developed cases).

Furthermore, while intrinsic cases all had specific social significance, as Etkin noted, seminal cases may or may not be selected for use in teaching (EI-1). In this regard, the selection of cases for their intrinsic value was based on faculty members’ perceptions of the need for students to have knowledge about a particular case.

Faculty members’ influence on the selection of tools for case descriptions was influenced by their expressed beliefs about the how the effects of different tools mediated students’ learning (e.g., Etkin’s use of cases that engaged students affectively, Waugh’s use of visual case material). However, very few of the case tools examined in this study had been explicitly designed for use as teaching cases, rather faculty members adapted or constructed their own case descriptions. In this regard, the functional effects of tools were relative to faculty members’ intentions, which may or may not be aligned with the intentions of the designer of tools used for case descriptions. Individual patterns in the types of tools used for case descriptions were noted, which reinforces that while some beliefs about the functional
and development effects of cases are commonly held, these are manifest in different ways across individual faculty members’ teaching practices.

Faculty members also made active choices in the selection of knowledge frames, which were the tools for giving cultural meaning to a case. As previously discussed, knowledge about a case could be framed from a disciplinary or professional practice perspective. The selection of disciplinary-based knowledge frames appeared to be influenced by (a) the disciplinary background of faculty members and the degree to which they have adopted other disciplinary perspectives and (b) faculty members’ perspectives on the disciplinary characteristics of DEM as a field of study. For example, Waugh viewed DEM through a bi- or multidisciplinary perspective; furthermore, in addition to framing cases from his own disciplinary perspective, he said he was curious about and selected alternative perspectives. However, there was no evidence of Waugh’s attempt to synthesize from across these perspectives; rather, for Waugh, different disciplinary perspectives offered alternative ways of understanding DEM phenomena. In contrast, Phillips’s disciplinary background was as a sociologist; over time, she had come to value and promote interdisciplinary ways of looking at DEM phenomena. Further, Jensen viewed DEM as its own discipline. These different beliefs were reflected in faculty members’ approaches to the selection of disciplinary lenses used to give meaning to cases in learning activities.

I found limited evidence of direct personal influence in the problem frames for case-based learning activities to develop knowledge about how to do something; rather, problem frames appeared to be more strongly influenced by disciplines (e.g., research problems) or the profession (e.g., professional practice problems). An exception was Shaw’s framing of the Coast Guard case, which drew from his direct experiences with the events associated with
the case. In addition to selecting professionally scripted problem frames (e.g., Shaw’s Lawnjeray® case, Kushma’s Electronic Hallway cases), problem frames were also constructed by faculty members (e.g., Kushma’s Hurricane Sandy case).

**Influence on the activity structures.** I identified three different ways in which faculty members’ influence was reflected in the structure of case-based learning activities. The first was the degree of prescription, the second was the division of labour, and the third was rules.

I found individual patterns with regard to the degree of prescription for case-based learning activities. Of all the participants, Waugh’s activities appeared to be the most loosely prescribed. As he indicated, he often made things up on his way into a class, with these spontaneous changes being a result of current events or things he had been recently thinking about (WW-I1; WW-I2). His ability to be flexible within a class or in a course was in part because he had an extensive collection of materials related to hazards and disasters he had gathered during his long teaching career that he could spontaneously draw from. While some of Etkin’s case activities had more structure (e.g., video and assignment activities), others did not and were also loosely prescribed. Etkin provided the most extensive list of case examples (17), however very few of these had any prescribed pedagogical structure. When asked to describe his approach to teaching with cases, Etkin said he “just did it” (DE-I1). In contrast, Jensen said one of the tenets of her teaching philosophy was being well prepared (JJ-I1); this was reflected in the level of detail she was able to provide about her case activities, and the degree of prescription she provided to students for her case-based learning activities.

While teaching philosophy and pedagogical practice was an influence on the degree of prescription in some case-based activities, it was not the only influencing factor. All
assignment-based activities, for example, necessarily required a degree of prescription, regardless of teaching philosophy. Furthermore, all simulation-based activities also required some level of prescription to enable to students to participate in the activity. Nonetheless, even when these factors were accounted for, I continued to find discernable individual differences in the degree of prescription for the design of learning activities. For example, Etkin and Jensen both used a case-based assignment in which students examined a disaster from the perspective of the four pillars. Etkin’s assignment provided minimal guidance, whereas Jensen’s assignment instruction provided a significant level of detail. The differences between the assignment characteristics reflected their personal styles and teaching philosophies.

I also found individual patterns in faculty members’ influence on the characteristics of the division of labour for case-based learning activities. In case-based learning activities designed to develop students’ knowledge about something, the associative connection between a case and knowledge frame could be (a) tool mediated (e.g., journal article, book); (b) mediated by the faculty member or students; or (c) some combination thereof. When the associated connection was tool mediated and case-based readings were assigned, the readings may or may not be further discussed in class. For example, McEntire assigned case-based readings, which students were expected to complete prior to coming to class. His said his own experiences as a student led him to use the class time to cover additional material rather than reviewing what students had read (DM-I1; DM-I2). While he would reference the assigned readings in his class presentations, primary responsibility for creating the further association between the case and concepts covered in class was the responsibility of the students. In contrast, Jensen assigned case-based readings as an out-of-class activity, and
then actively worked with students in class to construct metacategories of knowledge from the readings; this was the same method that had been used during her doctoral studies (JJ-I2). She attributed this practice to the state of development of DEM as a field of study, which included the lack of formal synthesis of what is empirically known about a topic from across diverse disciplines. These individual patterns in the approach to the use of cases and division of labour were consistent across different courses that McEntire and Jensen taught and reflected their personal pedagogical styles. I found the greatest level of responsibility for students in the division of labour of case-based learning activities in Kushma’s and Shaw’s case-based learning activities, which were focused on development of students’ knowledge of how to do something. Kushma’s and Shaw’s influence on the division of labour was due to her or his choice to develop students’ knowledge of, rather than about, something. These choices appeared to be based on beliefs that cases are tools for actively engaging students in learning activities.

Finally, I found individual patterns with regard to a faculty member’s influence on the rules for case-based learning activities. As discussed in Chapter 5, participation and timing rules reflected faculty members’ personal values. For example, Phillips’s participation expectations were grounded in her beliefs about the roles of students and the instructor in the learning process, and McEntire’s timing rules for completion of assigned reading before class were founded upon his personal experiences as a learner. In summary, faculty members’ framing of the objects, along with their general pedagogical beliefs about how students learn and how to design learning activities appeared to be primary factors influencing the structure of case-based learning activities.
**Discussion about faculty member influences.** Kreber (2009) suggested, “personal theories of teaching” (p. 26) and “perceptions of self” (p. 26) were two factors associated with faculty members’ influence on the characteristics of learning activities. In this study, the concept of self was reflected in faculty members’ disciplinary identities, which in some instances had changed over time. For example, Etkin talked about how his view of the cause of disaster had shifted from physical factors, which aligned with his early disciplinary studies in the physical sciences, to understanding that disasters and disaster risk are strongly influenced by social factors. Similarly, Phillips talked about how she has shifted from being a sociologist to a disaster researcher. While Etkin’s and Phillips’s original disciplinary orientations were still reflected in the characteristics of their learning activities, their orientation was filtered through the new lenses that they had adopted over time.

Personal theories of teaching were clearly reflected in faculty members’ approaches to the use of cases in their teaching. Beliefs about how cases support learning influenced the characteristics of objects, the selection of cases and case tools, and the division of labour in case-based learning activities. While faculty members’ teaching philosophy was a strong influence on the division of labour, the roles of students and the instructor in an activity were also strongly mediated by the characteristics of material tools selected for a case activity.

The patterns of faculty member influence I identified in this study extended beyond their “personal theories of teaching” (Kreber, 2009, p. 26) and “perceptions of self” (p. 26), and included what students need to learn. While their faculty members interpretation of what students need to learn is consistent with the ideas of academic freedom within an academic setting, their interpretation of students’ learning needs were also situated and relative to degree type in the university in which the faculty member worked.
Institutional Influences

I found six institutional factors that appeared to be an influence on the characteristics of the case-based learning activity designs examined in this study: (a) the departmental home of the DEM program within the institution, (b) the characteristics of the DEM degree offered by the institution, (c) the admissions criteria, (d) the geographic location of the university, (e) the delivery model, and (f) general institutional norms and rules. In some instances the influence of these individual factors was distinct, and in others the influences of different institutional factors were conjoined. Figure 7 illustrates these pathways of influence; examples of these influences will be described in this section.

![Diagram of institutional influences on case-based learning activities.](image)

Figure 7. Institutional influences on case-based learning activities.

**Departmental home and degree characteristics.** As illustrated in Table 2, there was considerable diversity in the disciplinary base associated with departmental homes and degree types of the DEM programs in which faculty members participating in this study were situated. While many of the faculty noted the historical influence of FEMA in initiating DEM programming at their university, the characteristics of the programming that emerged and
degree of development of this programming overtime differed between institutions. Degree types included DEM degrees, as well as degrees in other fields of study, with DEM as a specialization. Departmental homes included standalone departments, as well as other associated departments within a given university. The particular departmental home appeared to be a function of where individuals who were interested in developing DEM programming were situated within a given university.

I found the influence of the departmental home and degree characteristics on the characteristics of case-based learning activities could be conjoined or separate influences. For example, the DEM programs at George Washington University, where Shaw taught, were situated in the department of engineering management, and DEM was a specialization in an engineering management degree. The objects of Shaw’s case-based learning activities were all focused on developing students’ management competencies, and the cases were all examples of management problems in the DEM field. In this example, there was congruence between the departmental home and degree characteristics. In contrast, at Oklahoma State University, where Phillips taught, the departmental home of political science was not found to have a particular influence on the characteristics of Phillips’s case-based learning activities; however, the degree characteristics did have an influence. The degree offered at Oklahoma State was a Master of Science in Fire and Emergency Management, and thus attention was given to fire cases (e.g., Australian fires), in addition to more traditional emergency management cases (e.g., Katrina). At North Dakota State University, where Jensen taught, the DEM program was situated in its own department, and the degree offered was a Master of Science in Emergency Management. The institution viewed DEM as its own academic discipline, and this belief, which Jensen also held, was reflected in the structure of
many of her case-based learning activities, which focused on synthesis of knowledge from across different disciplines and construction of a distinct body of knowledge about human experience with hazards and disasters. Thus, while departmental home and degree type could be an influence on the characteristics of a learning activity, where these differed, the degree type appeared to be the stronger mediating influence.

**Admission criteria.** I found the admission criteria at institutions, as well as the degree type and delivery model, to be an influence on the characteristics of students. For example, at George Washington University, the DEM program is situated in the Engineering Management department. While an undergraduate degree and work experience were part of the admission criteria, there was also an expectation that students have the requisite math skills required for admission to an engineering management program (GS-I1). Shaw explained a “remedial calculus course” (GS-I1) was created so that students who lacked the necessary math skills could gain admittance to the program. All of the courses at George Washington University were offered in the evening; thus the program was able to cater to a professional market, and most students were working full time in the emergency management sector (GS-I1). In contrast, Waugh said the profile of students in the DEM concentration in the Master of Public Administration and Master of Public Management and Policy programs at Georgia State University was fairly traditional, and the entrance prerequisites (e.g., quantitative skills, graduate record exam) precluded participation of most traditional emergency management practitioners with fire and police backgrounds. While the Master of Public Administration program at Georgia State was also delivered in the evening to permit part-time study, institutional practices were less accommodating of students who did not have the requisite background (WW-I1). Institutional admission criteria were a strong
influence on the characteristics of students, and thus influenced students’ starting points in any given learning activity.

**Geographic location.** I found the geographic locations of the institutions to be an influence on geographic context in which cases were situated. While some courses included a specific focus on the international context and international cases, others did not, and in these instances the default context for cases was the domestic country context in which the institution was located. Six of the seven faculty members participating in this study worked at universities situated in the United States, and one worked at a university in Canada. Etkin, who taught at York University, was the only one to select Canadian cases. For the six faculty members who all taught in the United States, the default context for cases was the United States. The intrinsic value of certain cases was also linked to the domestic country context, as well as to local community contexts. For example, while the 9–11 case has a particular significance in the United States context, the Oklahoma bombing and plane crash cases held particular significance for students because of relationship to their particular local context.

**Delivery model.** I found the delivery model to be an influence on the structural design of case-based learning activities. For example, Shaw’s simulation-based activities were designed for use in a face-to-face environment, whereas Kushma’s simulation-based activities were designed for use in an online environment. Etkin’s, Waugh’s, and Jensen’s learning activities were all designed for use in face-to-face environments, while some of Phillips’s activities were designed for hybrid delivery, which enabled students to participate either face to face or virtually through Adobe Connect (Adobe Systems, 2012).
**Academic norms.** Institutional rules relating to academic integrity expectations (e.g., no plagiarism) were described in some of the course syllabi. These rules were applicable to all learning activities in a course.

**Discussion about institutional influences.** Kreber (2009), referencing Becher and Trowler’s (1989) work on *Academic Tribes and Territories*, suggested institutional and departmental cultures are two contextual factors that influence the disciplinary characteristics of learning activities. The primary pathway of influence of disciplines, as discussed in Chapter 2, is on the characteristics of objects (what is looked at) and tools (lens used to look with and through; Kreber, 2009). The findings from this study reflect the influence of institutional and departmental cultures extends beyond the characteristics of objects and tools, and extends to the characteristics of the subject, rules, division of labour, and mode of delivery for a learning activity, as well as the geographic context associated with cases used in a course. Further, the patterns of influence on the characteristics of the objects, tools, subject, and mode of delivery appear to reflect the particular ways in which DEM as a program of study has developed within a given university.

**Disciplinary Influences**

A goal of this study was to understand disciplinary influences on the characteristics of case-based learning activity designs as manifest in the teaching of faculty members who are leading the development of DEM as a new field of study. As previously illustrated, faculty members had different disciplinary backgrounds with varying beliefs about the disciplinary characteristics of DEM as a field of study. Furthermore, there were differences between the departmental homes for the DEM program, as well as the characteristics of the DEM degree within the institution. Table 18 compares these four different disciplinary characteristics.
### Table 18

**Comparison of Individual and Institutional Disciplinary Characteristics**

<table>
<thead>
<tr>
<th>Faculty Member Education</th>
<th>Personal Views of the DEM Field</th>
<th>Disciplinary Home</th>
<th>Graduate Degree Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shaw, DSc in Engineering Management</td>
<td>A management science</td>
<td>School of Engineering, Department of Engineering Management and Systems Engineering</td>
<td>MS and PhD in Engineering Management, with a concentration in Crisis, Emergency and Risk Management</td>
</tr>
<tr>
<td>McEntire, PhD in International Politics</td>
<td>Bidisciplinary, public administration focus with EM specialization</td>
<td>Department of Public Administration</td>
<td>MPA and PhD in Public Administration, with specialization in emergency management</td>
</tr>
<tr>
<td>Waugh, PhD in Political Science</td>
<td>Multidisciplinary</td>
<td>Department of Public Management and Policy</td>
<td>MPA, MPP, and MPH with emergency management specialization</td>
</tr>
<tr>
<td>Phillips, PhD Sociology</td>
<td>Multidisciplinary field moving to interdisciplinary, and determined to make it a discipline</td>
<td>Department of Political Science</td>
<td>MSc and PhD in Fire and Emergency Management Administration</td>
</tr>
<tr>
<td>Etkin, MSc in Physics</td>
<td>Multidisciplinary and interdisciplinary</td>
<td>School of Administrative Studies</td>
<td>Master in Disaster and Emergency Management</td>
</tr>
<tr>
<td>Kushma, PhD in Urban and Public Administration</td>
<td>Interdisciplinary, with roots in public administration and sociology</td>
<td>Department of Emergency Management</td>
<td>MSc &amp; DSc in Emergency Management</td>
</tr>
<tr>
<td>Jensen, PhD in Emergency Management</td>
<td>DEM is a distinct academic discipline</td>
<td>Department of Emergency Management</td>
<td>MSc in Emergency Management</td>
</tr>
</tbody>
</table>

*Note. DEM = Disaster and Emergency Management; EM = Emergency Management; MPA = Master of Public Administration; MPH = Master of Public Health; MPP = Master of Public Management and Policy; MS = Master of Science; MSc = Master of Science; PhD = Doctor of Philosophy; DSc = Doctor of Science.*
The findings from this study suggest that both individual and institutional disciplinary characteristics were an influence on the disciplinary characteristics of case-based learning activities, with the influences being reflected in the characteristics of the objects, cases and case tools, and rules for learning activities. These different pathways of influence, as illustrated in Figure 8, reflected the educational histories of each of the faculty members, as well as the different histories of development of DEM as field of study at each institution.

Figure 8. Disciplinary pathways of influence on case-based learning activity designs.

Note. DEM = Disaster and Emergency Management.

Disciplinary orientation of departmental home. While all DEM programs, at the outset, were situated within existing disciplinary-based departmental homes (e.g., sociology at North Dakota State University, public administration at Jacksonville State University), over time some DEM programs have come to be situated in their own departmental home. At the time of the conduct of this study, two of the seven institutions had established a separate department of emergency management. Three of the programs were situated in departments associated with public administration or administrative studies. This appears to reflect the
conceptualization of emergency management as a specific type of public service activity. This pattern may also reflect the influence of the 1984 initiative between FEMA and the National Association of Schools of Public Affairs and Administration, which sought engage public administration scholars in researching and teaching in the emergency management field, and developing emergency management programs (Comfort, Waugh & Cigler, 2012).

While all of the DEM degrees were initially specializations in other degrees, at the time of conduct of this study four of the seven universities had established separate emergency management degrees; in the other three institutions, DEM was still treated as a specialization within an already established degree in the institution, with the degree type being associated with the departmental home for the program. The disciplinary characteristics of DEM programs within a university can be contrasted with the disciplinary background of the faculty member, and his or her personal beliefs about the disciplinary characteristics of DEM as a field of study.

**Faculty members’ disciplinary background.** With regard to individual disciplinary backgrounds and perspectives, some faculty members, such as Waugh, still strongly identified with their disciplinary foundations, whereas others, such as Etkin, had significantly shifted to incorporate other worldviews and perspectives. Waugh’s learning activities addressed the administrative and policy dimensions of practice and this perspective reflected his disciplinary background. Although Waugh did occasionally select other disciplinary perspectives, this appeared to be from personal interest, rather than a need to examine phenomena from an interdisciplinary perspective. Etkin had shifted away from the hard sciences to become a social scientist. This change influenced what he had students look at (e.g., human experiences with hazards, social vulnerability) as well as the lenses he selected
for looking at these phenomena (e.g., *At Risk* model). The two faculty members who held the strongest views of DEM being a distinct and unique field of study were Phillips and Jensen. Their beliefs were most strongly reflected in their choices of disciplinary lenses associated with the knowledge frames for activities designed to develop students’ knowledge about something. For example, as evidenced by the readings lists in Jensen’s course syllabi, she intentionally selected cases written from different disciplinary perspectives to develop students’ knowledge about different aspects of disaster response and recovery. Faculty members’ disciplinary backgrounds and perspectives could be aligned with, or differ from the disciplinary characteristics of the institutions in which they worked.

**Views of the disciplinary characteristics of DEM programs.** As illustrated in Table 18, in some instances, faculty members’ backgrounds and views reflected the particular characteristics of the departmental home of the DEM program within the institution at which they worked, and in other instances, they did not. For example, Shaw, Waugh, and Jensen held different beliefs about their views of DEM as field of study, but their disciplinary backgrounds and beliefs reflected the disciplinary orientation of the departmental home for DEM programs within the university where they taught. In contrast, Phillips viewed DEM as a multidisciplinary field of study that was moving towards interdisciplinary, and she said she was determined to help DEM become recognized as distinct discipline. While the departmental home for the DEM program she was teaching in was situated in the Political Science department, the institution had made the shift from offering a specialization within this department to a separate DEM degree. In this regard, Phillips’s beliefs were in line with the degree characteristics, rather than the departmental home. In contrast to others, Jensen held the view that DEM was its own discipline. This view reflected the uniqueness of
Jensen’s own disciplinary background in comparison to other faculty members participating in this study, as she was the only participant who held a Doctor of Philosophy in Emergency Management degree. Her beliefs were aligned with the institution and characteristics of the degree offered by the NDSU. Jensen and Phillips both noted that an influence in the shift to move from separate and multidisciplinary approaches to the development of DEM as an interdisciplinary field of study and its own discipline is due to the development of doctoral programs in the field.

**Discussion about disciplinary influences.** The patterns in disciplinary influences on the characteristics of the case-based learning activities examined in this study were found to align with Trowler’s (2009) discussion of the influence of disciplines and departments on the design of learning activities and his assertion that “agency means that the regularities imposed by social structures is always provisional” (p. 181). In this regard, the influence of disciplines on case-based learning activities appeared to be indirect and mediated by (a) the disciplinary background and perspectives of the faculty member, which was subject to change over time; (b) the disciplinary orientation of the institution, as reflected in the degree type and disciplinary home; and (c) disciplines that have looked at the phenomena examined in a DEM program of study. Specific provisional factors, based on the findings from this study, suggest that the degree type, regardless of the departmental home, was an influence on both the characteristics of the objects (what is looked at) and the tools (lens for looking with and through). Further, faculty members’ views of the disciplinary characteristics of the field, when they differed from the departmental home, were found to be an influencing factor on the characteristics of knowledge frames. While reflecting the influence of an institution and an individual faculty member, the disciplinary characteristics of case-based learning
activities were also mediated by external factors, such as which disciplines and disciplinary perspectives (i.e., single vs. multi-, inter-, or transdisciplinary) have framed and informed the study of different objects.

Within other literature, disciplinary influences on the characteristics of pedagogical practice are theoretically attributed to the epistemological structure of a discipline, which, as Kreber (2009) suggested, reflects both the cognitive dimensions of a discipline as described by Biglan (1973), as well as the social dimensions as described by Becher and Trowler (1989). Based on the characteristics of the objects and tools in the case-based learning activities examined in this study, the cognitive dimensions of DEM as field of study can be described as being soft (vs. hard), applied (vs. pure), and related to life systems (vs. nonlife systems), while the social dimensions are divergent (vs. convergent) and rural (vs. urban). The cognitive dimensions of learning activities were reflected in what constituted a case. Cases were all related to life systems and explored different dimensions of human experience with hazards and disasters, including emergency management practice. Additionally, the objects of case-based learning activities, regardless of whether they were focused on developing students’ knowledge about or knowledge of how to do something, all reflected attention to the application of knowledge as an intended outcome of learning activities. While sharing these cognitive similarities, there were also cognitive differences. The cognitive differences reflect the social dimensions of DEM as a field of study, particularly the differences between the departmental homes and degree types, and diversity of disciplinary backgrounds of faculty members teaching in DEM programs. In this regard, while DEM has developed as new field of study within the social sciences, the characteristics of this new field reflect the cultures of the fields that have helped to influence and shape this new field of
study, as well as the diversity of the ways in which programs have been developed. As illustrated in faculty members’ discussions about the history of development of the DEM program at the institutions in which they worked, one of the impetuses for the development of this new field has been needs of the profession.

**Influence of the Profession**

I found five pathways of influence of the profession on the characteristics of faculty members’ case-based learning activity designs. The first was the need for advancement of practice within the profession, which was a motive for the development of DEM post-secondary programs. The second was the use of the four-phase model for conceptualizing practice. This influence was reflected in the structure of curriculum and titles of courses, as well as the characteristics of objects and tools. The third pathway of influence was faculty members’ interpretation of the relationship between DEM as an academic program of study and DEM professional practice. Their beliefs about this relationship were reflected in the objects of case-based learning activities, as well as in the reasoning for the division of labour in some learning activities. The fourth pathway of influence was the reference to and use of grey literature and other materials related to professional practice. The final pathway of influence was the needs and motives of students, and their characteristics. These different influences of the profession on the different elements of learning activity are illustrated in Figure 9 and will be discussed in more detail in this section.
Figure 9. Influences of DEM professional activity on case-based learning designs.

**Needs of the profession.** Concerns about the state of DEM practice were found to be one of the original motives for the development of DEM programming at universities. As illustrated in the individual faculty member case reports, the history of development of DEM programming at universities in the US was strongly influenced by FEMA, and in particular by Dr. Wayne Blanchard.

**Four-phase model.** The strongest reflection of the influence of the profession on the case-based learning activities examined in this study was four-phase or four-pillars model (i.e., mitigation, preparedness, response, recovery), which is dominant frame for conceptualizing DEM practice in the United States and Canada. This frame was an influence on the characteristics of what was looked at in case-based learning activities, as well as the way in which courses in DEM programs were organized. As previously discussed, the four-phase model was developed by the United States National Governors Association in 1978 as a means of standardizing terminology related to emergency management practice (Canton, 2007). The close geographic relationship between the United States and Canada led to the use of the same conceptual model in the Canadian context. The characteristics of the objects
and cases in learning activities could all be classified based on their relationship to one or more of the four dimensions of practice. Thus, while DEM is an academic field of postsecondary study, a cognitive attribute is that it is inherently an applied field of study.

More recent changes in conceptualizing practice, such as FEMA’s integration of homeland security and emergency management following the events of September 11th (Drabek, 2007), were reflected in the subject matter for some courses (e.g., McEntire’s *Terrorism and Homeland Security* course). An outcome of integration of homeland security with emergency management activity has been the inclusion of *prevention* as a fifth type of professional activity. While there are differences between prevention and mitigation outcomes, prevention is most commonly linked with mitigation (e.g., prevention/mitigation), thus maintaining the integrity of the four-phase model (Public Safety Canada, n.d.).

There was a noted lack of reference to models of conceptualizing DEM practice that are used outside of the US and Canada. For example, other countries use other terms for conceptualizing the phases or pillars. Additionally, within the international community, the term *disaster risk reduction* is widely used. However, there was a noted lack for reference to the use of this term and associated professional practice frameworks (e.g., Sendai Framework for Disaster Risk Reduction), particularly in teaching practices of faculty members situated in the United States. Through anecdotal conversations that I have had with faculty members attending the annual FEMA higher education symposium about this gap, the reason for lack of reference appears to be rooted in broader United States cultural views about the relevance of United Nations and their work.

**Methods for development of professional expertise.** As previously discussed in the section on faculty members’ influences, they held different beliefs about the characteristics
of DEM as a program of study. These beliefs were reflected in the characteristics of the objects of case-based learning activities. There were a limited number of faculty members whose approach to the use of cases extended to include development of professional practice competencies. Thus, while DEM as a field of study has a practical aim, the examples of learning activities reflected that case-based learning pedagogies were strongly oriented towards knowledge rather than competency development. In the case-based learning activities that were oriented toward competency development, attention was directed towards what professionals do, as well as how professionals work. This reflected faculty members’ interpretation of the types of competencies needed in DEM professional practice.

**Professional practice tools.** The applied nature of DEM as a field of study was reflected in the characteristics of some of the case tools. In addition to the reflection of the four-pillars model in the empirical literature referenced in case-based learning activities, case tools included the use of materials related to professional practice, such as government reports on Australian fires (BP-CS1) and the Haiti reconstruction plan (BP-CS1).

**Student characteristics and motives.** Faculty members spoke about the changing characteristics of DEM professionals, and how this change was reflected in the characteristics of students who were enrolling in some programs. Additionally, faculty members spoke about student motives for participation in DEM programs, with a central reason being that DEM as a profession is about saving lives. The profile of students enrolling in DEM programs included those who already have some professional experience and were wanting to advance in their careers, as well as those who had limited or no professional experience upon enrolling in a program.
Phillips was concerned about the lack of diversity of student profiles in DEM programs, and the consequence of this for the profession, as well as for who was conducting research in the DEM field. She actively worked to increase the diversity of those enrolling in the DEM program where she taught.

**Discussion about the influence of the profession.** While there is now a Certified Emergency Manager (CEM) designation available through the International Association of Emergency Managers (IAEM), there has, to date, been limited influence of this body on DEM postsecondary programs; rather, the influence has been the other way. A degree is now one of the requirements for certification as an emergency manager (IAEM, n.d.). While there is no established pathway for formal influence of the profession on DEM postsecondary programs, in faculty members’ descriptions of the history of development of DEM programs at their institutions, they spoke about FEMA’s motives for supporting the development of DEM higher education programming as being rooted in the needs of the profession (WW-I1; DM-I1; GS-I1; BP-I1). Thus, the influence of the profession on the development of DEM programming has been indirect and based on interpretations by institutions and faculty members how DEM as a program of studies could contribute to the advancement of the profession. Some of the professional practice needs, as previously discussed, have been the application of research to practice and the ability to learn from prior experience (FEMA, 2014; Fothergill, 2000).

Concerns about the state of DEM practice were found to be one of the original motives for the development of DEM programming at universities. As illustrated in the individual faculty member case reports, in the United States, the history of development of DEM programming at universities was strongly influenced by FEMA, and in particular by
Dr. Wayne Blanchard. The influence of the dominant way of conceptualizing DEM practice in the United States (i.e., four-pillars model) was a strong influence on the characteristics of what was looked at in case-based learning activities, as well as the way in which courses in DEM programs were organized. The influence of the profession was also seen in the characteristics of case tools, with the use of grey literature related to professional practice.

Knowledge about how pedagogies support the development of professional expertise has come through formal studies of professionally oriented programs of study. The Carnegie Foundation’s studies of professional preparation programs examined the characteristics of pedagogies in a range of different professional fields (Shulman, 2005). Based on the findings from these studies, L.S. Shulman (2005) asserted that pedagogies associated with professional areas of practice develop or should develop students’ ability to deal with “three fundamental dimensions of professional work – to think, to perform, and to act with integrity” (p. 52). Different programs of study, L.S. Shulman (2005) noted, place different emphasis on each of these dimensions. From an activity theory perspective, case-based learning activities to develop students’ knowledge about something or knowledge about a particular case placed emphasis on the thinking dimension of professional work, which may include thinking about performing and acting with integrity. In contrast, the case-based learning activities designed to develop faculty members’ knowledge of how to do something developed students’ ability to perform in simulated situations that reflected professional practice.

The characteristics of the three dimensions of professional work differ by professions, and these differences are reflected in the characteristics of signature pedagogies within different fields of study (Shulman, 2005). As the construct of signature pedagogies has been
explored in other fields of study, the emphasis has been on examining the inter-relationship between content and pedagogy, and how pedagogy contributes to the development of expertise in a discipline, field of study, or professional practice (e.g., Chick et al., 2012; Gurung et al, 2009). As part of this study, I asked faculty members to share their interpretation of the three dimensions of professional expertise in the DEM field. Their views on the characteristics of DEM professional practice are described in the subsections that follow.

**What is the primary object of DEM professional activity?** From an activity theory perspective, what professionals do is reflected in the object of their activity. While each faculty member’s expression of the characteristics of what professionals do was expressed in a different way, there was similarity in their interpretation of what DEM professionals do in practice, and the competencies needed to do this work. The description that follows reflects their collective views. All faculty members in this study emphasized the scope of DEM activity extends beyond responding to disasters, and includes mitigation, preparedness, as well as recovery. Faculty members said DEM professionals needed to be leaders and managers, however this did not mean they were primary decision makers; rather, DEM professionals were seen as being one of a number of stakeholders who brought a particular type of expertise and knowledge to the table. In working with others, it was perceived that the role of an emergency manager was to facilitate, coordinate, encourage collaboration and networking, and build consensus about how to deal with problems and situations. And to bring their expertise to the table, it was suggested DEM professionals need to be knowledge translators and that this ability was essential to supporting the application of research to
practice. And finally, to achieve results, faculty members believed DEM professionals needed to have political acumen, and planning and problem-solving skills.

*What ways of thinking are needed in the DEM profession?* Consistent with the role of being a manager and leader, faculty members emphasized that DEM professionals need to focus on strategic, rather than tactical matters. It was perceived that this orientation requires the ability to analyze the complexity of operating contexts, systems thinking, and particularly an understanding of open systems. Furthermore, it was believed the ability to analyze and work towards solving complex problems under conditions of uncertainty and ambiguity required professionals (a) use evidence to inform decisions; (b) be flexible, adaptable, improvise, and be creative; (c) apply logically consistent decisions and a structured and defendable approach to decision making; and (d) ensure timely decision making.

While I found similarity in the responses to the questions about the primary object of DEM professional activity and the kinds of thinking needed by DEM professionals, I found a diverse array of responses to the question about what ethics or values should guide professional practice. L. S. Shulman (2005) noted that this dimension of practice was often missing in professional preparation programs.

*What ethics or values should guide professional DEM practice?* The responses to the questions about what ethics and values should guide the DEM profession fell into three categories. The first category related to the object and outcome of practice. The outcome of DEM professional activity was viewed as saving lives and protecting communities and organizations in order to make them safer. The second category related to how professionals worked. Common beliefs were that emergency management professionals needed to value working with others and see themselves as providing service to others. In doing this, one of
the values noted was that a professional must respect the diversity of perspectives represented by different stakeholders. The third category related to ethical considerations pertinent to decision making. The range of considerations were offered and included the need to (a) understand how decisions would impact different stakeholder groups; (b) be able to apply scarce resources for the public good; (c) demonstrate compassion, caring, and concern for all, as well as fairness, justice, and equity; (d) consider duties and rights, and valuing people and not things; (e) do no harm; and (f) utilize common sense.

Summary of Cultural-historic Influences on Case-based Learning Activity Designs

This summary provides a final response to the question: What cultural-historic influences are reflected in the characteristics of faculty members’ case-based learning activity designs? The findings from this study were (a) the faculty member, institution in which they work, disciplines that inform DEM as a field of study, and DEM as an emerging area of professional practice were each an influence on the cultural characteristics of the case-based learning activity designs examined in this study; and (b) the particular histories of each of these four different social entities was a further influence on some of the cultural characteristics of the learning activities. These findings are in keeping with the propositions developed at the outset of this study and consistent with assertions in the literature as discussed in Chapter 2 about the types of agents that have an influence on the characteristics of learning activities. The analytic methods used in this study supported the identification of different pathways of influence of each of the four social entities. The findings about these pathways of influence, while being consistent with the literature, also further extended knowledge about the ways in which the agency of each different agent is manifest in learning activity designs. In this regard, the variety of practices in how faculty members use cases in
their teaching, while reflecting their different individual beliefs and personal pedagogical practices, also appears to be reflective of the diversity of ways in which DEM postsecondary programs have developed during the last few decades. Nonetheless, while individual and institutional agency appeared to be a strong influence on the cultural characteristics of case-based learning activities, similarities in beliefs about how cases support learning and approaches to the use of cases in DEM post-secondary programs were found. The similarities provide a foundation for advancing discussion about the distinctive reasons why cases might be used in DEM postsecondary programs, as well as what the characteristics of these pedagogical practices might me.
Chapter 7: Instructional Design Guidance and Conclusion to Study

This chapter presents a response to the third and final question in this research study: What instructional design guidance can be derived from this study’s findings to inform a theoretically grounded approach to the use of cases in learning activities in disaster and emergency management postsecondary programs? The instructional design guidance offered in this chapter includes two components: a domain-based outcome theory and an instructional design framework, which are two recognized forms of guidance that can be developed from research investigating how certain types of interventions (i.e., cases) support learning in specific contexts (Edelson, 2002). The characteristics of and rationale for the development of these forms of instructional design guidance will be explained in this introductory section of Chapter 7. As the presentation of the instructional design guidance provides a response to the third and final research question in this study, this chapter concludes with a summary of the contributions of the study, a review of the limitations, and recommendations for further research.

Two sets of cross-case patterns in the findings from this study influenced the approach to the development of the instructional design guidance presented in this chapter: (a) there were three distinct types of learning outcomes associated with the use of cases in learning activities in DEM programs and (b) the function as well as functional and developmental effects of the use of cases were relative to these learning outcomes. This pattern in the findings supported the development of a domain-based outcome theory (Edelson, 2002), which describes (a) three types of learning outcomes that can be achieved through the use of cases in learning activities in DEM postsecondary programs and (b) how the use of cases supports the achievement of each type of learning outcome. The
development of an outcome theory for explaining the use of cases in the DEM field is in keeping with the type of analytic generalizations that can be made from case-based research studies, as well as design-based research studies (Edelson, 2002; van den Akker, 2010; Yin, 2014). While the outcome theory was derived from the findings from this study, the theory was also found to describe differences between the use of cases in established signature pedagogies in law, business, and medicine programs. In this regard, the outcome theory offers a novel way of conceptualizing the use of cases in learning activities.

The second set of patterns in the findings was (a) why faculty members used cases in learning activities influenced how they used cases in their teaching and (b) how faculty members used cases in their teaching was influenced by the context in which they were situated. The case-based learning activity designs examined in this study reflected faculty members’ personal beliefs about what students should learn, as well as how cases support this learning. Their beliefs regarding what students should learn appeared to reflect their beliefs about (a) the learning outcomes in a DEM program of study and (b) the disciplinary orientation of DEM as a field of study (e.g., multidisciplinary, interdisciplinary). Further, DEM programs were situated in different departmental homes in universities, and the types of degrees offered varied; the influence of the departmental home and degree type appeared to have a conditional effect on how faculty members used cases in their teaching. Thus, for instructional guidance to be of value in the DEM field, it needs to reflect what is known about how these different variables effect how cases are used in learning activities. The second set of patterns supported the development of an instructional design framework (Edelson, 2002). The design framework (Edelson, 2002) consists of design principles (van den Akker, 2010) that offer an interpretation of the application of the outcome theory.
The design principles offered in this chapter are primarily substantive principles (e.g., characteristics of an intervention), rather than methodological principles (e.g., procedures for achieving the characteristics; Edelson, 2002; van den Akker, 1999).

**Theoretical Reasons for Using Cases in DEM Postsecondary Programs**

The theoretical explanation of the reasons for using cases in DEM postsecondary programs is framed in relation to activity theory, which is a sociocultural learning theory that is based on the proposition that learning occurs through activity. The basic unit of human activity is understood to be a subject acting on an object through the use of psychological and material tools, which are culturally derived (Vygotsky, 1978). From an activity theory perspective, a learning outcome is the object of a learning activity. Further, objects, and thus learning outcomes, distinguish activities (Leont’ev, 1974). Thus, the first frame for distinguishing between reasons for using cases in learning activities in DEM postsecondary programs is based on learning outcomes.

**Learning outcomes.** There are three different type of learning outcomes that can be achieved through the use of cases in DEM programs. Cases can be used to develop students’ knowledge (a) about a particular case, (b) about something else, and (c) of how to do something. Each of these different types of learning outcomes reflects various intentions regarding the kind of knowledge to be developed through a learning activity. From an activity theory perspective, intentions reflect needs, which become the motive for an activity, and are realized in the object of an activity (Kaptelinin & Nardi, 2009). Each of the three types of learning outcomes reflects different learning needs and motives for the use of cases in DEM postsecondary programs. While the three different types of learning outcomes are not unique to DEM as a field of study, there are specific reasons why faculty members in this
study used cases to support the achievement of these types of learning outcomes in their teaching. Hence, this is a domain-based outcome theory.

*Needs and motives for developing knowledge about a particular case.* The value of studying particular cases is relative to a program of study. For example, in legal programs, the need to study particular cases is because they set a precedent (Garvin, 2003). The patterns in the findings from this study suggest there were two motives for developing students’ knowledge about particular cases in DEM programs. The first reason was certain disaster events are deemed to be socially significant, and the second reason was certain disaster events offer unique opportunities for learning. These two reasons may or may not be conjoined in a particular case.

Events that faculty members perceived to be socially significant included local events, as well as major international disasters. The significance of a particular event may be limited to the context in which the event occurred, or context transcendent. For example, major ice storms in Canada in 1998 and several major wildfires in Australia (e.g., 1983, 2009) may be deemed significant in those contexts, but not in others. In addition, events such as the 1984 Bhopal gas tragedy or the 2011 Japanese triple disaster, while having significance in the local context, were also significant because of policy ramifications in other contexts. When an event is deemed to be significant and learning from the event is realized through policy or practice changes, the event can be considered to be a seminal or focusing event (Birkland, 1997).

While particular cases may be deemed be socially significant and provide the opportunity for learning, this does not mean that they are always used in learning activities. The use of cases for their intrinsic value is a course design decision by faculty members and
reflects the value they personally place on developing students’ knowledge about certain cases. In addition to using cases to develop students’ knowledge about particular events, cases can also be used to develop students’ knowledge about something else.

**Needs and motives for developing students’ knowledge about something else.** The need for using cases to develop students’ knowledge about something reflects the value universities place on empirical ways of knowing and the kind of knowledge developed through participation in university programs. The kinds of knowledge developed through the use of cases in DEM postsecondary programs include (a) conceptual, knowledge, and strategic knowledge related to DEM as a field of study and (b) knowledge about research methods used in the DEM field. A characteristic of this type of knowledge is that it is generalized and abstract. In this study, faculty members’ reasons for using cases to develop students’ knowledge about something related to students’ ways of knowing and learning, as well as how cases support learning about abstract concepts. This reasoning reflects the influence of the interrelationship between the subject (students) and object (learning outcomes) in the design of a learning activity. The types of cases used in activities to develop students’ knowledge about something are common cases (Yin, 2014), which offer insight into what is known about something. In addition to developing students’ knowledge about something, another motive for the use of cases in DEM programs was the need to develop knowledge of how to do something.

**Needs and motives for developing students’ knowledge of how to do something.** The use of cases to develop students’ knowledge of how to do something reflects that competency development is a desired outcome in DEM postsecondary programs. Competency development learning outcomes in a DEM program of study includes development of
knowledge of what professionals do, as well as how professionals work, from both a technical (e.g., hazard and risk assessment methods) and social (e.g., collaborative decision making) perspective. While some of the technical competencies associated with specific functional areas of DEM practice (i.e., mitigation, preparedness, response, and recovery activities) are unique, many of the social competencies (e.g., facilitation, coordination, collaborative decision making) are common to all of these functional areas. Competency development in DEM graduate programs of study includes development of research competencies, which also have technical and social dimensions. The use of cases to develop students’ professional competencies was not found to be a standard practice across institutions, rather it appeared to be influenced by faculty members’ beliefs about the nature of DEM as a field of study (e.g., academic vs. applied), as well as the value placed on competency development by a DEM program at a particular university, and the characteristics of courses taught. The next section will explain how cases are understood to support achievement of these three different types of learning outcomes.

Functions of cases in learning activities. While faculty members’ reasons for how cases supported learning were personal and craft based, I identified patterns in their explanations about how cases support learning. I found the patterns in their reasoning to have a basis in activity theory, as well as the literature on case-based research. Table 19 illustrates the relationship between the three types of learning outcomes and the function of cases from these two perspectives in the literature. Each of these frames for understanding the functions of cases is explained in this next section. Following this explanation, the functional and development effects of the use of case in relation to the three different types of learning outcomes will be explained.
In Table 19, the *Learning Outcomes and Functions of Cases Relative to Outcomes* are presented as follows:

<table>
<thead>
<tr>
<th>Learning Outcomes</th>
<th>Case-Based Research - Functions of Cases</th>
<th>Activity Theory – Functions of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop knowledge about a particular case</td>
<td>The function of a case is for its intrinsic value</td>
<td>Knowledge about a particular case is the object of a learning activity</td>
</tr>
<tr>
<td>Develop knowledge about something else</td>
<td>The function of a case is for its instrumental value</td>
<td>A case is a psychological tool and a theoretical example of something</td>
</tr>
<tr>
<td>Develop knowledge of how to do something</td>
<td></td>
<td>A case is a psychological tool and an example of practice problem</td>
</tr>
</tbody>
</table>

**Intrinsic versus instrumental reasons for using cases.** Case-based research methods establish the ways in which knowledge can be constructed from cases. The function of cases in development of knowledge can be for their *intrinsic* or *instrumental* value (Stake, 1995). While all cases are by definition a theoretical example of something (Shulman, 1986; Stake, 1995), intrinsic cases are studied because of the need to learn about a particular case, whereas instrumental cases are studied because they provide insight into knowledge about something else (Stake, 1995). The distinction between these two different functional reasons for using cases does not appear to be recognized in existing typologies for the use of case in learning activities (e.g., Barrows, 1986; Jonassen, 2011; Kim et al., 2006); rather, existing typologies appear to presume that the use of cases in learning activities is for their instrumental value. However, the use of cases for their intrinsic value in learning activities has been well established in law programs, with the emphasis being on learning about cases in which precedents were set (Garvin, 2003).

In addition to the particular reasons faculty members used cases for their intrinsic value in DEM programs, general reasons for studying cases for their intrinsic value are established in the case-based research literature (e.g., Merriam, 1998; Stake, 1995; Yin,
2014). For example, Yin (2014) suggested a single case can be of value because it is (a) a critical case, which explicates or tests theory; (b) an extreme or unusual case, in that it sheds light on something because of its deviation from the ordinary; (c) a revelatory case, which gives insight into situations that may not have previously been accessible for study; and (d) a longitudinal case, which gives insight into changes over time. These different reasons for studying particular cases in case-based research may also be reasons for developing students’ knowledge about particular cases in learning activities.

**Cases as objects versus cases as tools.** From an activity theory perspective, the use of cases for their intrinsic value is associated with the function of a case as an object, whereas the use of cases for their instrumental value is associated with the function of a case as a psychological tool. When a case is the object of a learning activity, the intended learning outcome is development of students’ knowledge about a particular case. There are two different types of learning outcomes associated with the use of cases for their instrumental value. Cases can be used to develop students’ knowledge about something or knowledge of how to do something. While knowledge about something can include both declarative as well as procedural knowledge, knowledge of something is a richer form of understanding, in that it implies the ability to use knowledge to do something (Scardamalia & Bereiter, 2006). Thus, there are two instrumental reasons for using cases in learning activities, with these being distinguished based on the type of knowledge to be developed through an activity. The development of students’ knowledge about something or knowledge of how to do something has a particular relevance and value in the DEM field, because it is a professionally oriented academic program of study. With this background on the functions of cases in learning activities, the functional and developmental effects of cases will now be described.
**Functional effects of cases as tools.** The explanation about how cases support learning differs based on whether the function of a case is to develop students’ knowledge about or knowledge of how to do something. While the intended learning outcome of developing students’ knowledge about a particular case (the case as an object) or knowledge about something else (the case as a tool) differs based on whether the emphasis is the general or the particular, the method of how cases function in the development of students’ knowledge about a case is the same.

Study participants believed cases are tools for bringing abstract concepts to life for students. This belief has a foundation in established learning theory. From an activity theory perspective, human experience, whether real or imagined, results in the generation of a sensuous image of reality in the mind of a student (Leont’ev, 1977). When human experiences are internalized, cultural meaning is ascribed to the experience (Leont’ev, 1977). As cultural meaning, in the form of language, is always associated with reference to the objective world (Leont’ev, 1977), students need an experiential frame of reference in order to make sense of and understand the cultural meaning of things.

The need to use cases to develop students’ knowledge about something else is conditional and relative to students’ experience in relation to an intended learning outcome. Students who have relevant experience may be able to associate their existing knowledge with cultural meaning about something (e.g., theory about the causes of disasters, theory about social vulnerability). Students’ lack of experiential frame of reference pertaining to the object of a learning activity creates a need that becomes a motive for the use of cases. Further, while some students in a class may have related experience (e.g., same disaster event), their experiences may differ. The use of cases in a class environment gives students a
common experiential frame of reference to support development of their knowledge about something. While cultural meaning can be ascribed to a case as an instance of experience, as cultural meaning about something is internalized it acquires a personal quality (Leont’ev, 1977). The use of cases in learning activities provides the opportunity for students and the instructor to share their interpretations of the meaning about a case.

Study participants’ reasons for using cases to develop students’ knowledge about something in DEM postsecondary programs related to the need to develop disciplinary ways of seeing and thinking about hazards, disasters, and the practice of emergency management, as well as to develop knowledge about professional practice perspectives (e.g., principles and standards for practice). This learning need, in turn, reflects the broader motives for the development of DEM as a field of postsecondary study, which was that social science research about human experience with hazard and disasters was not be applied in practice.

The effects of cases in developing students’ knowledge of how to do something can also be explained from an activity theory perspective. The function of a case in these kinds of activities is as a problem to solve. From an activity theory perspective, a problem is a need that becomes the motive for an activity, and solving a problem or learning how to solve a problem becomes the object of a learning activity. The central proposition about how cases support this form of knowledge development is that learning occurs through activity, and participation in cultural forms of activity results in the “internalization of socially rooted and historically developed activities” (Vygotsky, 1978, p. 57). This proposition is reflected in the construct of apprenticeship.

_Developmental effects of cases as tools._ In addition to the functional effects of cases in learning activities, faculty members in this study also used cases because of their
developmental effects. Regardless of the type of learning outcomes, one of faculty members’ reasons for using cases in DEM programs was because cases support remembering. The method by which cases support remembering is also established in propositions within activity theory. Human memory is mediated by the use of signs (e.g., words, concepts; Vygotsky, 1978); Vygotsky referred to this as “mediated remembering” (p. 51). Leont’ev (1977) qualified that, in humans, meanings always “retain their initial objective reference” (p. 172). Thus, a developmental effect of the use of cases is that remembering of knowledge about something, or remembering of how to do something, is associated with memory of the case (or cases) used in a learning activity. What is remembered is a situated knowledge about something. The second developmental reason that faculty members used cases in their teaching was the use of cases supported a deeper level of understanding about things. From an activity theory perspective, the number of cases used in a case-based activity and the depth of study of a case are variables that influence knowledge about something.

With this understanding of the different (a) learning outcomes that can be achieved through the use of cases in DEM programs, (b) ways in which cases support achievement of different learning outcomes, and (c) reasons for using cases in DEM postsecondary programs, a design framework to support the use of these various methods will now be offered. The design framework was also informed by activity theory and an analysis based upon activity theory of how faculty members used cases in their teaching in DEM programs.

**Design Framework**

This instructional design framework, which offers an interpretation of how the outcome theory for the use of cases in DEM postsecondary programs can be applied, is presented in three parts. The first part of the framework briefly describes two conceptual
Learning activity designs from an activity theory perspective. There are two models associated with activity theory that help to explain the constituent parts of a learning activity: the triangular model and the hierarchical model. The triangular model, as illustrated in Figure 2 in Chapter 2, shows the interrelationship between six distinct elements of an activity system.

The hierarchical model reflects that while needs and motives are realized in the object of an activity, activity itself is comprised of actions directed towards goals, as well as conscious or unconscious operations based on conditions.  

The characteristics of cases and case tools. The following principles, which were derived from this study’s findings, describe the characteristics of cases and case tools used to in case-based learning activities in DEM postsecondary programs. As van den Akker (2010) noted, design principles are intended to offer heuristic guidance for the use of cases in learning activities.

**Principle 1: The content of DEM cases is reflective of the academic subject matter associated with a specific course and program of study.** The characteristic of what constitutes a case in a learning activity is reflective of a particular program of study. While there is diversity in the characteristics of degree programs in the DEM field, in terms of

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16 In the presentation of this design guidance to an external audience, a description of the activity theory models would be provided.
which department they are situated in and the type of degree awarded, there is nonetheless some degree of commonality about what constitutes a case in a DEM program of study. DEM cases are examples of situations related to different dimensions of human experience with hazards and disasters and the practice of emergency management; this is the general domain of knowledge associated with DEM as a field of study, or DEM as a specialization within another field of study (e.g., MPP or MPH). The dimensions of human experience looked at in DEM cases can be described based on the type of social unit (e.g., individual, organizational) that is the focus of a case and the dimension (or dimensions) of professional activity (e.g., mitigation, preparedness) associated with a case. The situational attributes of DEM cases can be described based on the (a) hazard type (e.g., natural, technological); (b) event type (e.g., crisis, disaster); (c) context (e.g., domestic or international as well as social, political, or economic attributes); and (d) temporal dimensions of a case (e.g., prospective or retrospective as well as period of time studied in a case). A necessary criterion for selection of cases is the need to link to the academic subject matter for a particular course.

**Principle 2: Cases must be realistic, but can differ in the degree of realism.** While cases in learning activities need to be a realistic example of something, or present students with a realistic problem to solve, they can be (a) *real experiences* (e.g., current or historical disaster events), (b) *fictitious cases* based on real experiences (e.g., as in Harvard Business cases), or (c) purely *hypothetical cases* that are scripted for a learning activity. The degree of realism of a case is influenced by the characteristics of the intended learning outcome. Cases in activities to develop students’ knowledge about a particular case or about something else are most commonly real experiences, whereas cases in activities to develop students’
knowledge of how to do something are commonly fictitious cases based on real experience or hypothetical cases, although real cases can also be used.

**Principle 3: In any given learning case-based activity, there are two psychological dimensions to case tools.** All case activities include some form of *case description*. The psychological function of this dimension of the case tool is generative, in that it brings a case to life for students in way that creates a sensuous image of reality in students’ minds. The second psychological dimension of case tools differs depending on whether the object of the activity is to develop students’ (a) knowledge about a particular case or general knowledge about something or (b) knowledge of how to do something. The psychological tool for developing knowledge about something is a *knowledge frame*, whereas the tool for developing knowledge of how to do something is a *problem frame*. The characteristics of each of these three different psychological dimensions of case tools are as follows.

Case descriptions provide students with an account of a human experience, and in doing so provide a vicarious form of experience. This account can be real or imagined, and serves as a proxy for real experience. The account of a situation can be framed from different perspectives. Examples include the perspectives of people impacted by a disaster, the media, professional practice, and government. Faculty members can also draw from personal experience to describe a case, with their frame of reference being a researcher, a professional, or a participant observer. Any given case activity can have multiple tools for describing a particular case, and thus offer multiple perspectives on the case. The perspective through which a case is described is an influence on what is looked at in a case. In addition to the perspectives presented through case tools, students bring their own perspectives about current or historical cases into a learning activity. These perspectives reflected their direct personal
experience with a disaster or indirect knowledge about a disaster (e.g., media perspectives, stories from others). In case-based learning activities designed to develop students’ knowledge about a particular case or knowledge of how to do something, there is only one case in a learning activity, whereas in activities designed to develop students’ knowledge about something else, a single case or multiple cases can be used.

A knowledge frame in a case activity is the tool for ascribing meaning to the instance of experience presented in a case description. Knowledge frames can be described based on the type of knowledge to be developed (e.g., conceptual, procedural) in a learning activity, as well as the lens or perspective from which the knowledge is framed. Two primary perspectives for knowledge frames in learning activities are the disciplines and professions that inform and are associated with a field of study. Factors that influence the characteristics of the knowledge frame used in a learning activity are (a) a faculty member’s own disciplinary background and perspectives on the academic subject matter related to a course, and (b) the faculty or school in which the program of study and DEM degree or specialization is situated within a university. For example, some faculty members view DEM as its own discipline, while others view it as an interdisciplinary or multidisciplinary field. In addition, some faculty members teach in programs in which DEM is a specialization in a separate degree (e.g., MPP or MPA), while others teach in programs that offer some form of a master’s degree in DEM. These factors are an influence on the characteristics of what is looked at, and the lens for looking with and through a learning activity, and thus what students learn.

A problem frame situates students as actors in relation to either a professional practice problem or a research problem; these different problem types reflect the dual aims in
professionally oriented graduate programs of study. A characteristic of DEM professional practice and research problems is that both are considered to be ill structured, as they have no one right answer. These types of problems require students to individually or collectively develop a best approach to dealing with the problem. Problem frames can vary in terms of (a) the number of perspectives about a problem that are presented and need to be taken into account; (b) the complexity of the problem; and (c) whether the problem is static or dynamic, as it is presented in a learning activity.

**Principle 4: The characteristics of cases tools selected for a learning activity influence the division of labour and structure of a case-based learning activity.** While case tools always have two psychological dimensions, they may or may not have a material form. The two different psychological dimensions of case tools (case and knowledge frame or problem frame) can be presented verbally, in a material form (e.g., video, journal article, book), or some combination thereof (e.g., slideshow presentation and discussion about a case). Material tools can be used for the purpose intended (e.g., journal articles), repurposed for educational use (e.g., media articles), or constructed by the faculty member using various media (e.g., slideshow presentations, handouts). Further, in their material form, the two different psychological dimensions of the case tools (i.e., case and knowledge frame or case and problem frame) can be conjoined (e.g., case-based book or journal article, exercise scenario), or comprised of two or more separate tools, with the tools having different psychological functions. In learning activities to develop knowledge about a particular case, the case description and knowledge frame are often conjoined in one material tool, whereas when the object is to develop general knowledge about something, the case description and knowledge frame are often different tools. These tool characteristics, in turn, are an influence
on the characteristics of the associated case-based learning activity design. The selection of case tools is based on necessary as well as enabling criteria; these criteria differ based on the characteristics of the learning outcome for a case-based learning activity.

**Activity design principles.** The following principles, which are derived from this study’s findings, describe the characteristics of case-based learning activity designs by the type of learning outcome. For each of the three types of learning outcomes, principles related to case and case tool selection, as well as the design of learning activities are offered.\(^{17}\) The principles are intended to offer heuristic guidance for the use of cases in learning activities in DEM postsecondary programs. The principles build from the findings in this study about how cases are currently used in DEM postsecondary programs, as well as from conjectures about how cases might be used to support achievement of each of the three different types of learning outcomes. The conjectures consider how approaches to the use of cases in other fields of study could be adapted for use in learning activities in DEM postsecondary programs.

**Design principles to support development of knowledge about a particular case.** The use of cases for their intrinsic value can be either a preplanned or spontaneous activity. Differences between these two approaches are reflected in the characteristics of cases and case tools as well as the design of the associated case-based learning activities.

**Case and case tool selection principles.** With the preplanned use of cases for their intrinsic value, the subject matter for a course is a delimiting factor in selection of cases; this is because intrinsic cases are still, in one way or another, illustrative of something. The

\(^{17}\) In the presentation of this guidance within the DEM or SOTL communities, a more complete set of case examples will be offered.
preplanned use of cases for their intrinsic value requires that consideration be given as to whether the cases are related to a particular course that are of particular importance, provide a unique opportunity for learning, or are of seminal value. When used spontaneously, cases involve current events that are deemed to have a particular importance; this type of intrinsic case may or may not be directly linked back to the academic subject matter for the course.

When using cases for their intrinsic value due to their social significance, evidence of the importance and relevance of the case needs to be established; this evidence can come from either a disciplinary or a professional practice perspective. Examples of case tools that established the significance of particular cases from a disciplinary perspective are (a) Freudenburg et al.’s (2009) text *Catastrophe in the Making: The Engineering of Katrina and the Disasters of Tomorrow* and (b) Samuel Prince’s (1920) study of the 1917 Halifax Explosion. In addition, an example of tool that establishes the significance of a case from a practice perspective is the *9–11 Commission Report* (National Commission on Terrorist Attacks Upon the United States, 2004). The evidence and claims to support assertions about the significance of events are laid out in Freudenburg et al.’s text and in the *9–11 Commission Report* (National Commission on Terrorist Attacks Upon the United States, 2004), while the significance of the Samuel Prince study was established at a later date. The Prince study has since become widely recognized as the first systematic sociological study of a disaster (Scanlon, 1988). In the intrinsic case examples described above, the case description and knowledge frame were conjoined in one material tool. The particular frame for each case influenced what was looked at in the case, and established the meaning and significance of the case. In this regard, knowledge about particular dimensions of a case and the reason for its significance were the objects of the associated learning activity.
A constraint on the preplanned use of cases for their intrinsic value is the time lag between a disaster event and when substantive empirical studies or other reports (e.g., government) about the event are published. While it is still possible to talk about the significance of an event prior to the publication of empirical studies or other reports, evidence of the impact learning from an event in the form of policy or practice change is something that usually happens over time. An alternative approach, when there is a lack of literature establishing the significance or learning from an event, is to use existing tools for a knowledge frame that explain what is known about policy or practice change in the DEM field (e.g., Birkland, 2006). Propositions about the factors influencing policy or practice change can be used to as a tool for examining public discourse and other data related to an event that is perceived to provide an opportunity for learning in the DEM field. This approach may be of particular value when considering the significance or opportunities for learning from local events, where formal research about the event might not be conducted.

The spontaneous use of cases for their intrinsic value is in response to local or global current events. Local events can be significant because of their impact on students in a course and their impact on the local community. In contrast, major events such as the 2011 Japanese triple disaster (earthquake, tsunami, nuclear event) or the West African 2014 Ebola outbreak were recognized as having particular significance at a global level during the period when the events happened. While the significance of current events is reflected in public discourse, in a learning activity, the significance and unique attributes of a case (e.g., number of deaths following the 2004 Indian Ocean tsunami relative to other major disaster events), if they are to be of intrinsic value, needs to be constructed by a faculty member in real time, drawing from available resources. The framing of the significance of an event in a learning activity
will draw from disciplinary or professional practice perspectives. The difference between the characteristics of case tools for the preplanned and spontaneous use of case for their intrinsic value is an influence on the design of case-based learning activities.

Activity design principles. With the preplanned use of cases, there are two contrasting approaches to the use of cases for their intrinsic value. A key distinction is whether the case description and knowledge frame are conjoined or separate tools. The tool characteristics influence the division of labour and structure of a case-based learning activity.

When the case description and knowledge frame are conjoined, the tools employed are in-depth case study reports that establish the significance of the case. The implicit action is for students to individually read the case report, thus development of students’ knowledge about a particular case is initially tool mediated. One design consideration is whether or not additional supplemental components to a reading activity are needed. Most commonly, reference will be made to the reading in class-based discussions. These discussions can focus on (a) substantive details of a case as reflected in the case description, (b) the interpretation and meaning given to the case, or (c) the methods of inquiry as reflected in the case study report.

When the case description and knowledge frame are not conjoined, the case description can draw from publically available information about the event, and the knowledge frame can draw from existing tools, such as one of Birkland’s (1997, 2006) books that explain policy change after disaster events. As the two psychological dimensions of the case tools are not conjoined, the association between the knowledge frame and case description need to be constructed by either the faculty member or students, or some
combination thereof. This kind of activity can be done in or out of class and may or may not include an assessment component.

With the spontaneous use of cases for their intrinsic value, the lack of existing case tools is also an influence on the design of case-based learning activities. Due to the lack of formally published studies related to a disaster event, the case description will necessarily draw from publicly available information and materials. The tools for interpreting the significance of a case can come from a variety of sources, including disciplinary or professional practice perspectives. The characteristics of tools chosen are an influence on the design of a case-based learning activity. Table 20 provides a comparison of key characteristics of preplanned and spontaneous approaches to the use of cases for their intrinsic value.

Table 20

*Characteristics of Activities for Developing Knowledge About Particular Cases*

<table>
<thead>
<tr>
<th>Activity Elements</th>
<th>Preplanned Use of Cases</th>
<th>Spontaneous Use of Current Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case and Case Tool Characteristics</td>
<td>Use of Conjoined Case Tools</td>
<td>Use of Separate Case Tools</td>
</tr>
<tr>
<td>Case and Case Tool Characteristics</td>
<td>Cases are historical events, and the case and knowledge frame are conjoined in one material tool, which reflects the in-depth study of a case from a particular disciplinary or professional practice perspective.</td>
<td>Cases are deemed to have intrinsic value; however the particular value is not already established in a material form. Case description draws from publically available data, and the knowledge frame draws from a disciplinary lens.</td>
</tr>
<tr>
<td>Division of Labour Characteristics</td>
<td>Individually oriented reading activity.</td>
<td>Association between the case and knowledge frame is constructed by students or the instructor.</td>
</tr>
</tbody>
</table>
Design principles to support development of knowledge about something else. Case-based learning activities to develop students’ knowledge about something can also be preplanned or spontaneous. Preplanned activities can be further distinguished based on whether they are in-class or out-of-class activities. In addition to developing students’ knowledge about something, case activities can also be used to assess students’ knowledge about something.

Case and case tool selection principles. Instrumental case selection is influenced by the kind of knowledge to be developed in a learning activity. The necessary criterion for selection of a case is that it must be a good example of an instance of experience related to the abstract concepts and ideas that students need to develop knowledge about. As the relationship between a case and the knowledge that the case is an example of is theoretical, the selection of cases is always a qualitative assessment by a faculty member of the degree of fit and suitability of a given case. The degree to which the context is considered in case selection can be an active or passive choice. The use of comparative cases from different context can support development of students’ knowledge about how context influenced the phenomena looked at in case.
In addition to the necessary criterion of being a good example of something, enabling criteria can influence case selection. An example of enabling criterion is the selection of cases that align with students’ interests (e.g., fire related disaster cases for students who are firefighters). A different type of enabling criterion would be the selection of a case because it is an exemplar of best practice. Additionally, faculty members’ interests and knowledge about the content of particular cases is another factor that can influence case selection. While a faculty member normally selects cases for learning activities, students may also be given this responsibility.

Case selection can also be influenced by the characteristics of case tools. Different tools bring cases to life in different ways. While there may be personal pedagogical preferences for the use of different tools for bringing cases to life (e.g., narratives, video), from a theoretical perspective, the function of the tool remains the same. The function of a case is to support the generation of a sensuous image of reality in the mind of students. In this regard, the criteria for selecting case descriptions should be based on the degree to which the case tool supports generation of sensuous image of an experience and creates a vicarious experience for students. Case descriptions can also be framed from multiple perspectives (e.g., people impacted by a disaster, organizational perspective), which each offer a different interpretation of an experience. The perspective reflected in a case description may be another criterion for the selection of cases and case tools.

Another consideration in case selection is the number of cases used in a learning activity. The object of a learning activity influences whether a single case example is sufficient to develop general knowledge about something, or whether multiples cases should be used. Comparative cases can be selected because they are either literal or theoretical
replications (Yin, 2014). The use of comparative cases in the DEM field is particularly relevant because the phenomena studied are inherently complex and situated. The degree to which knowledge about something is context dependent or transcendent is a factor that should influence whether or not comparative cases are used. The use of comparative cases can give insight into factors that influence variability between contexts; this knowledge can support knowledge transfer to other contexts. Thus, while a single case may be sufficient to develop students’ knowledge about something, the use of multiple cases, if selected for particular reasons, may deepen students’ knowledge about something. Another pedagogical reason for the use of multiple cases is the development of students’ knowledge about something from different disciplinary perspectives. In addition, the use of multiple cases is also influenced by tool characteristics. For example, the use of a case-based text related to disaster recovery (e.g., Aldrich, 2012) as a tool facilitates comparative analysis of a set of cases related to recovery.

The knowledge frame for case activities can draw from disciplinary and professional practice perspectives. Each perspective contributes to development of students’ knowledge about a case in different ways, and the choice of perspective is influenced by how faculty members have interpreted students’ learning needs in relation to a particular course and program of study. The knowledge frame used in a case-based learning activity can be directly or indirectly associated with a case. When it is directly associated with a case, the case description and knowledge frame are conjoined in one material tool (e.g., journal article, case-based book), whereas when the association is indirect, the two psychological dimensions of the case tools are separate. While this gives greater choice for selection of a knowledge frame, the association between the knowledge frame and the case needs to be
constructed by either the instructor or students, or some combination thereof. Example of tools that can be used to provide knowledge frames from a disciplinary perspective include theories related to the phenomenon that is the object of a learning activity, as well as other literature (e.g., a textbook on disaster recovery) that synthesizes what is empirically known about certain phenomena. The disciplinary lens (or lenses) used in case-based learning activities can be influenced by the disciplinary (a) background of the faculty member, (b) orientation of the DEM program of study at an institution, and (c) perspectives that have been used to study the phenomena. While there is an inherent bias in the use of disciplinary ways of knowing within an academic field of study, there is also value in professionally oriented programs of study in using knowledge frames that reflect professional practice perspectives. The characteristics of the case tools are an influence on case-based learning activity designs, and particular the division of labour.

Activity design principles. The use of cases for the instrumental function of developing students’ knowledge about something can be either a spontaneous or preplanned activity. The reason for the spontaneous use of cases for their instrumental value is because the use of a case has become a conditional response to a perceived need to provide an example of something, or a spontaneous request to provide an example of something. These kinds of case examples will necessarily draw from the experiential frame of reference of the faculty member, which may or may not be associated with direct experience with a case. Students in the class may also be called on to offer examples.

Preplanned case-based learning activities can be either in-class or out-of-class activities, or a combination of these approaches. Out-of-class activities can be either individual or team based. Out-of-class activities can include low-structured case-based
reading assignments, as well as highly structured individually oriented or team-based activities. Highly structured out-of-class activities can be designed to develop and/or assess students’ knowledge about something. In-class activities can include medium-structured presentation and discussion-based activities, as well as highly structured activities. A key distinction between the medium and highly structured preplanned activities is the division of labour for mediating the associative relationship between the case and the knowledge frame for the case. In medium structured activities this is primarily the responsibility of the faculty member, whereas in highly structured activities this is primarily the responsibility of the student (or students). From a theoretical perspective, these differences in the design for the division of labour in an activity result in varying approaches to the social construction of knowledge. Table 21 summarizes the characteristics of case-based learning activities designed to develop students’ knowledge about hazards, disasters, and emergency management practice.

Table 21

*Characteristics of Activities for Developing Knowledge About Something*

<table>
<thead>
<tr>
<th>Activity Elements</th>
<th>Preplanned Use of Cases</th>
<th>Spontaneous Use of Cases</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>In-Class Activities</td>
<td>Out-of-Class Activities</td>
</tr>
<tr>
<td>Case Tool Characteristics</td>
<td>Case and knowledge frame are separate tools, which may or may not have a material form.</td>
<td>Case and knowledge frame are conjoined in one material tool, or are separate material tools.</td>
</tr>
<tr>
<td>Division of Labour Options and</td>
<td>Instructor presentation, which may or may not include discussion-based activities; student-led discussion about a case.</td>
<td>Individual or team-based activities.</td>
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<tr>
<td>Characteristics</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Design principles to support development of knowledge of how to do something.

The function of cases in developing or assessing students’ knowledge of how to do something is as a problem to solve. The terminology used to describe the methods of teaching with cases, as problems to solve can be confusing. In business programs, the use of cases as problems to solve is referred to as the case method, while in medical programs the use of cases as problems to solve is referred to as the problem method. As noted earlier in this report, the acronym PBL is used to reference the specific problem method used in medical programs, whereas the lower-case spelling of the words problem-based learning is used to refer to any problem-based learning method (Jonassen, 2011). The differences between the needs and motives for the use of cases in business and medical programs are reflected in the characteristics of the object and intended learning outcomes, rather than the function of a case, which in both programs is a problem to solve. The signature case methods used in both business and medical programs both have value in DEM programs because there are similarities in needs and motives for the use of cases. The principles for using cases as problems to solve in DEM programs, as presented here, draw from the findings in this study about this form of practice, as well as from the literature on general and signature approaches to the use of cases as problems to solve.
Case and tool selection principles. The first necessary criterion for selection of cases as problems to solve is that the case needs to be reflective of the academic subject matter for the course (e.g., disaster recovery, business continuity). Within this frame of reference, cases are selected because they reflect situations associated with professional practice or research problems that students are expected to be able to deal with following the completion of their studies (e.g., a preparedness planning problem in an organization). One challenge in the selection of cases is due to the diverse range of practice settings in which DEM professionals work. Given that the function of cases as problems to solve is for their instrumental value, case selection should be based on common problems in the DEM field (e.g., preparedness planning problems and hazard, risk, and vulnerability assessments).

In established fields of study, such as business and medicine, in which the practice of using cases as problems to solve is well established, case libraries have been developed and are sources of cases as problems to solve. Given that DEM is a new field of study, there are as of yet no established libraries of DEM cases; however, many existing case libraries (e.g., Harvard) have cases that are suitable for use in DEM programs. With these kinds of case tools, the case description and problem frame are conjoined. While the lack of professionally developed cases for use in DEM programs can be a constraint on the wider use of cases as problems to solve in DEM programs, this approach to the use of cases can be managed using other types of case materials. Any case that presents a situated problem can theoretically be adapted for use in a case-based learning activity.

The object of a learning activity delimits problem frame selection, when the problem frame is a separate tool. Problems can support development of knowledge of about something, as well as synthesis, integration, and application of knowledge about how to do
something. Faculty members’ interpretations of students’ learning needs and the types of competencies to be developed guide the selection of the problem frame. The characteristics of the case tools, as with any case-based learning activity, are an influence on the division of labour and structure of a learning activity.

*Activity design principles.* Activity designs to develop students’ knowledge of how to do something generally have a high degree of structure and require preplanning. These types of activities can be either in-class or out-of-class assignments, or some hybrid of these approaches. A characteristic of both approaches is that the activity is some form of simulation. The basic structure of simulations is that students are given a case scenario and then work either individually or in teams to develop an approach to dealing with problem presented in the scenario. The methods they develop for dealing with the problem can then be shared and compared. The comparison of responses is particularly appropriate when using ill-structured problems that have no one right answer, but for which there are best approaches. The particular structure of problem-based case activities is dependent on the needs and motives for the activity, as reflected in the object of a learning activity. The case methods used to develop students’ knowledge of how to do something in business and medicine can both be adapted for use in DEM programs. There is a good body of literature describing these particular methods to provide guidance on the use of these approaches. The use of problem-based case methods can also be used to develop students’ competencies with research. The general characteristics of case-based learning activities used to develop students’ knowledge of how to do something are described in Table 22.
Table 22

*Characteristics of Activities for Developing Knowledge of How to do Something*

<table>
<thead>
<tr>
<th>Activity Elements</th>
<th>Preplanned Use of Cases</th>
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<tr>
<td></td>
<td>In-Class Activities</td>
</tr>
<tr>
<td>Case Tools Characteristics</td>
<td>Case and problem frame may be conjoined or separate tools, and may or may not have a material form.</td>
</tr>
<tr>
<td>Division of Labour Characteristics</td>
<td>Team-based activities with the instructor facilitating the activity.</td>
</tr>
<tr>
<td>Activity Design Characteristics</td>
<td>Problem and simulation-based activities.</td>
</tr>
</tbody>
</table>

**Summary of Instructional Design Guidance**

This instructional design guidance offers insight into how and why cases have and can be used in DEM postsecondary programs of study. The outcome theory for using cases (a) established there are three distinct types of learning outcomes that can be achieved through the use of cases in the DEM field and (b) explained, with reference to established learning theory, how cases support achievement each of the outcomes. To support application of the theory, a design framework was developed to offer an interpretation of the application of the theory for the use of cases in DEM postsecondary programs. The framework had three parts: (a) a description of learning activities from an activity theory perspective, (b) a set of design principles that established the characteristics of cases and case tools, and (c) principles for case and case tool selection as well as activity design development to support achievement of each of the three different types of learning outcomes. A limitation of this guidance is that it was derived from the findings of this research study, and thus does not reflect the diversity of practices related to the use of cases in the DEM field. Further, this
design guidance has not yet been shared with research participants or other faculty members teaching in the DEM field. Their feedback will help to test the utility of the framework and to identify the ways the guidance can be improved.

**Study Conclusion**

The purpose of this research study was to learn about current practices for using cases in DEM postsecondary programs and to explore what approaches to the use of cases might be. The choice of this topic was influenced by my personal motives as well as gaps in the literature. The specific questions this study examined were as follows:

1. How and why do faculty members use case-based in their teaching in DEM postsecondary programs?
2. What cultural-historic influences are reflected in the characteristics of faculty members’ case-based learning activities?
3. What instructional design guidance can be derived from this study’s findings to inform a theoretically grounded approach to the use of cases in learning activities in DEM postsecondary programs?

This qualitative study investigated the practice of seven faculty members who have written about the development of DEM as a field of study or practice, and who have led the development of graduate programming in this new field of study. While case study methods support the development of analytic generalizations at a level above the specific cases (each faculty member was as case) in the study (Yin, 2014), these generalizations are inherently limited because they are only reflective of the practice, experience, and beliefs of the seven study participants. While I found commonalities across participants’ practices and beliefs, each participant in the study made unique contributions to knowledge about the use of case in
DEM postsecondary programs. In this regard, one cannot assume that the generalizations made are reflective of the broader practice with the use of cases in the DEM field. That was not my intent in conducting this study; rather my aim was to gain insight into current practices and to consider what the implications of this knowledge about practice might be for the use of cases more broadly in DEM postsecondary programs of study. In this regard, the study of faculty members’ practices was of instrumental value.

A limitation in any qualitative research study is that the researcher is the primary instrument in the study, thereby influencing all aspects of the design and conduct of the study. This study reflected my personal motives and biases. My biases influenced the theoretical lens used to frame this study and to interpret the study findings. These biases were mediated by my adherence to established case- and design-based research methods and through the description of the use of these methods in the conduct of this study. Additionally, having study participants review and provide feedback on each of their case reports, as presented in Chapter 4, was a means of addressing the trustworthiness of my interpretations. The feedback received from faculty members about their reports was limited. Recognizing the limitations of this study, several contributions to new knowledge were made through this study. These contributions are of particular value at this time of the formative development of DEM as a new field of study.

There are five major contributions made by this study. First, the study of participants’ practices and beliefs were of instrumental value because they shed light on why cases are used in learning activities in DEM programs, as well the particular ways that cases are used in teaching in the DEM field. Knowledge about how and why cases are used in the DEM field appeared as a gap in the literature.
Second, the interpretation of how and why faculty members used cases in learning activities was framed from both emic and etic perspectives. This methodological approach supported the development of theoretically grounded assertions that explain how cases support learning. This interpretation of how cases support learning was framed in relation to activity theory as well as the literature on case-based research. The conceptual framework developed for explaining how and why cases are used in DEM postsecondary programs was also found to explain differences between the use of cases in other established programs, including law, business, and medicine. This approach to the interpretation of how and why cases are used in learning activities appears to be a novel way of conceptualizing the use of cases in learning activities. Novel approaches for explaining design interventions are considered to be “ontological innovations” (diSessa & Cobb, 2004, p. 77).

A third contribution made by this study was knowledge about how four distinct types of social agents (i.e., faculty member, the university in which they work, disciplines that inform DEM as a field of study, DEM professional practice) each appeared to influence the characteristics of case-based learning activity designs. The interpretation of these pathways of influence was framed in relation to Kaptelinin and Nardi’s (2009) activity theory based typology of agents and agency. This study made a contribution to knowledge about the pathways of influence of each of the four agents on the design of case-based learning activities, and, in doing so, shed light on the characteristics of the characteristics of agency of these particular types of social entities. This knowledge was an important input into the design of the instructional design guidance, which was the fourth contribution made by this study.
The instructional design guidance that was developed as a product of this study included a domain-based outcome theory that (a) describes three types of learning outcomes that can be achieved through the use of cases in DEM postsecondary programs and (b) offers a theoretical interpretation of how cases support achievement of these learning outcomes. I developed the instructional guidance based upon (a) the study of current practice, (b) comparison with established signature practice of the use of cases in other fields of study, and (c) theorizing about these practices. The design framework may or may not be of value to others teaching in the DEM field. The presentation of and discussion of the findings from this study and the design guidance at a forthcoming FEMA Annual Higher Education Symposium will test the utility of this guidance, and the feedback received will support refinement of the guidance before it is more broadly disseminated.

The fifth and final contribution of this study was that it was a scholarly inquiry about teaching practice in a new and rapidly developing field of study. As L. S. Shulman (2005) asserted, “The way we teach will shape how professionals behave – and in a society so dependent on the quality of its professionals that is no small matter” (p. 59). Existing scholarship related to teaching in the DEM field has primarily involved descriptive accounts of teaching experience. There is as of yet no organized community of scholars in the DEM field whose work focuses on and contributes to development of knowledge about learning and teaching in the DEM field. Thus, in addition to the other substantive knowledge contributions made by this study, this study also sheds light on how SOTL inquiry can contribute to the development of teaching practices within the DEM field of study. As L.S. Shulman (2005) noted teaching practices, in turn, are an important influence on how DEM professionals fulfill their role in society.
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