Making Sense of the Public PhD Dissertation Defense:
A Qualitative Multi-Case Study of Education Students' Experiences

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September 2012

A thesis submitted to McGill University in partial fulfillment of the requirements of the degree of Doctor of Philosophy

Abstract

A public oral defense of the written dissertation is mandatory for completion of the doctorate in most North American universities, yet how students experience it has rarely been documented. This study examined how a group of Canadian education PhD candidates experienced and made sense of their dissertation defenses. Employing an identity lens, it focused on how these students viewed themselves, performed, and were viewed by others as researchers before, during and after the defense. The perspective on identity was principally drawn from the communities of practice (COP) theory. Accordingly, doctoral candidates' researcher identities were defined by *memberships* (being members in the community of researchers in certain fields/areas of research), *meanings* (making sense of defense experiences) and *trajectories* (ways in which the defense connects doctoral candidates' past, present, and future).

The participants were 11 PhD candidates (six women and five men) from three departments in a faculty of education at a Canadian research-intensive university. Each of them was interviewed before the defense about his/her preparation experience and after the defense about his/her defense experience. Through observation, questions from the 11 defense committees and the candidates' answers were recorded. Data also included the participants' background information and institutional documents regarding the conduct of the PhD dissertation defense. Over 20 other defenses were observed to understand the Faculty practices associated with the defense.

Case-specific findings pointed to how doctoral candidates performed as researchers during the defense by balancing knowing and not-knowing in answering defense committees' questions. The candidates navigated across research areas, methodological and epistemological borders, and drew on various sources of knowledge to demonstrate knowing; and they evaluated the significance and relevance of questions and provided provisional and hedged answers to negotiate not-knowing. Cross-case findings indicated that the defense confirmed most candidates' researcher identities and played a role in weaving together their past, present and future in terms of their researcher identity development. The study concluded with implications for interpreting doctoral candidates' defense experiences and for understanding the functions of the public PhD dissertation defense.

Résumé

Une soutenance orale publique de la thèse écrite est obligatoire pour l'achèvement du doctorat dans la plupart des universités nord-américaines, mais comment les élèves la vivent a rarement été documenté. Cette étude a examiné comment un groupe de candidats au doctorat canadiens en éducation ont vécu leurs soutenances de thèse. Employant une lentille d'identité, elle se concentre sur la façon dont les candidats au doctorat se considèrent comme des chercheurs, performent comme des chercheurs et sont considérés par les autres comme des chercheurs, avant, pendant et après la soutenance. Le point de vue sur l'identité a été principalement tirée de la théorie «communities of practice» (COP). En conséquence, l'identité des doctorants chercheurs ont été définis par les membres (dans la communauté des chercheurs dans certains domaines / zones de recherche), le sens (donner un sens à l'expérience de la soutenance) et les trajectoires (de quelle manière la soutenance de thèse des doctorants relie le passé, le présent et l'avenir).

Les participants étaient 11 candidats au doctorat (six femmes et cinq hommes) de trois départements d'une faculté d'éducation dans une université canadienne axée sur la recherche. Chacun a été interrogé avant la soutenance sur l'expérience de la préparation et après la soutenance sur l'expérience de la soutenance. Des questions des 11 comités de la soutenance et les réponses des candidats ont été recueillies, ainsi que les informations générales des participants et les documents institutionnels en ce qui concerne le déroulement de la soutenance de thèse de doctorat. Plus de 20 autres soutenances ont été observées pour comprendre les pratiques de la Faculté associés à la soutenance.

Conclusions sur des cas spécifiques révèlent la façon dont les candidats au doctorat performent en tant que chercheurs au cours de la soutenance de l'équilibrage de savoir et non-savoir à répondre aux questions des comités de soutenance. Les candidats ont navigué dans des domaines de recherche, méthodologiques, les frontières épistémologiques et s'est appuyé sur diverses sources de connaissances afin de démontrer le savoir, et d'évaluer l'importance et la pertinence des questions et a fourni des réponses provisoires pour négocier le non-savoir. L'ensemble des résultats ont indiqué que la soutenance a confirmé la plupart des candidats en tant que chercheurs et a joué un rôle dans le tissage de leur passé, présent et futur en termes de développement de leur identité de chercheur. L'étude a conclu avec des implications pour l'interprétation des expériences de soutenance des doctorants et pour comprendre les fonctions de la soutenance publique de thèse.

Acknowledgements

This project is what I wanted to do and enjoyed doing. I would like to take this opportunity to express my immense gratitude to all those people who have given their invaluable support and assistance.

First of all, I am profoundly indebted to my supervisor, Dr. Lynn McAlpine, whose support, encouragement, and patience made the completion of my doctorate possible. Lynn retired from the university in my second year into the program yet she kindly agreed to supervise me until I finished. She never missed my emails about the research and never failed to address my worries and concerns. She encouraged and funded me to attend national and international conferences and to publish in academic journals. She is not only a supervisor but also a mentor, who has been very much willing to share her own academic experiences and career decisions whenever I ask. I have learned so much from her throughout the years and I can never thank her enough.

I would like to extend my sincere gratitude to my advisory committee members, Drs. Anthony Paré and Cynthia Weston, for their patience, understanding, and insightful feedback. I wrote them three times asking for extensions for sending them a draft and they always responded with understanding, consolation, and encouragement. I thank them for taking pressure off the shoulders of a worried student!

This dissertation would not have been completed without the help of the coordinators and supporting staff in the three departments where I carried out the study (in alphabetical order): Susann Allnutt, Arwen Fleming, Carole Grossman, Kathryn Hubbard, Michael Lariviere, Nancy Nelson, Geri Norton, Alexander Nowak, and Mary Kate Wallbridge. My thanks also go to Drs. Robert Bracewell and Andrew Large, who showed their support for the project when they served as Associate Deans of Research and Graduate Studies in the faculty.

My special thanks are reserved for the participants in the project, who kindly allowed me to observe their defenses and shared their feelings and thoughts.

This research had been financially supported by my supervisor Dr. Lynn McAlpine's research grants (2007-2013) and a doctoral fellowship of my own (2010-2011) both from the Social Sciences and Humanities Research Council of Canada (SSHRC).

Many thanks go to my family in Canada and China. I owe a lot to my husband and soul mate, Yuwen. I thank him for his understanding of me spending weekends and holidays writing instead of staying with him and for listening to and consoling me whenever I felt overwhelmed and frustrated. Special thanks go to my younger brother and his wife, who, both holding a PhD, have been encouraging me by sharing their doctoral experiences. I am also grateful to my dad and older sister for their love and support.

I thank Pierre-Philippe Poirier for translating the abstract into French.

Notwithstanding all of the above support, any errors are solely my own.

This thesis is dedicated to the memory of my beloved mother.

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CHAPTER 1: INTRODUCTION

> *Doing a PhD has a lot in common with traditional cabinet-making. Back in The Past, an apprentice cabinet-maker would finish his apprenticeship … by making a cabinet which demonstrated that he had all the skills needed to be a master cabinet-maker. This piece of furniture was known as the "master piece"* (Rugg & Petre, 2004, p. 4).

The Doctor of Philosophy, or PhD, has its origin in Medieval Europe. The degree did not involve much research until the early 19th century, when some German universities started requiring research contributions from students (Park, 2007). In North America, the first PhD degree was awarded at Yale University in 1861. Today, doctoral education can be found in all continents and in almost all disciplinary fields.

The importance of doctoral education lies in the fact that doctoral education produces not only new knowledge but also knowledge-makers. As the Principal of *Public Knowledge Canada* Garth Williams once put it: "[D]octoral graduates … symbolize a university's quintessential contribution to the global knowledge-based society and economy" (Williams, 2005, p. 1). Like any other levels of education, doctoral education needs tools and standards to ensure the quality of its graduates. This in most jurisdictions entails doctoral examinations. In spite of the variation in how doctoral students are evaluated—which is not surprising given the different kinds of doctorates[1] (see Park, 2007) and disciplinary differences—almost all doctoral programs require students to write

[1] For example, PhD by publication, new route PhD, professional doctorate, practice-based doctorate, arts-based doctorate.

a dissertation reporting on a research project and, in most countries, this is followed by an oral exam in front of senior scholars.

The significance of the creation and assessment of the written dissertation has been widely recognized and systematically documented in the literature. For example, regarding creation, Paré, Starke-Meyerring, and McAlpine (2011) argue that the dissertation is not only the work of a doctoral student, but also that of the supervisor(s); Kamler and Thomson (2006, 2008) pointed out that the dissertation is identity work, in which a doctoral student demonstrates him/herself as a scholar; Aitchison (2009) suggested ways in which writing groups might facilitate doctoral writing. As regards assessment, Mullins and Kiley (2002) interviewed 30 experienced examiners in Australia and found that many dissertation examiners were applying their own criteria in assessing PhD dissertations rather than considering institution-specific criteria. Bourke, Hattie, and Anderson (2004) examined PhD examiner reports from several Australian universities and found that reports on high-quality dissertations often stress the significance and contributions of research whereas reports for less satisfactory dissertations critique literature coverage, use and accuracy. Holbrook, Bourke, Lovat, and Dally (2004), based on the same dataset as Bourke, Hattie, and Anderson (2004), discovered that for good-quality dissertations, examiners tended to personalize their comments for the candidates by praising their qualities as researchers and welcoming them into the academia; whereas for low-quality dissertations, their comments would focus on the texts. In contrast, the final oral defense, the other component of the doctoral examination, is far less researched. Currently, only a limited amount of research work can be found in the U.K.; little can be found in North America except for some occasional mentions in studies about other things (e.g., Arnkoff, Glass, & Robinson, 1992; Isaac, Quinlan, & Walker, 1992). How-to

guides, the books that aim to guide doctoral students through their doctoral journey, often contain chapters that provide doctoral students with information such as the procedure of the oral defense, how to make a clear and effective presentation, strategies to answer questions, and sometimes, common questions that are likely to be asked by the defense committee. These ideas can be helpful for doctoral candidates' preparation for their defenses. However, by representing the oral exam as a problem that can be easily solved with strategies and skills, how-to guides have largely ignored the role that the defense may play as the last milestone of the doctoral journey—which can be as long as 10 years in North America—and the personal meanings that doctoral students make from experiencing it. As a matter of fact, some how-to guides do admit that the dissertation defense is important and meaningful as the "pinnacle of an educational pyramid" (Garson, 2002, p. 302), "the culmination of a long preparation process" (Mauch & Birch, 1998, p. 253), "a test of how far you have traveled … and an interrogation of how you see the journey" (Murray, 2003a). Given that an oral defense is mandatory in most North American institutions and its unique status as the last milestone in a doctoral student's journey, it is worth more research and attention. This dissertation reports on a study about a group of Canadian doctoral candidates' experiences of their final dissertation defenses. In this chapter, I situate my research in the landscape of research in doctoral education, present the research questions, and outline the structure of the dissertation.

1.1 Situating the Research

Doctoral education as a field of research has only existed for a few decades. While the supervisory relationship has been the dominant area, other areas have emerged and burgeoned in recent years, especially doctoral students' experiences. Doctoral students'

experiences became a concern mainly because of the high attrition rate in doctoral education. In the United States, it is estimated that depending on disciplines, 30-50% of doctoral students leave their programs without a degree (Golde, 2005; Lovitts, 2001; Walker, Golde, Jones, Bueschel, & Hutchings, 2008). Research has revealed various aspects of doctoral students' experiences that might contribute to degree completion/failure. For example, some doctoral students have less access to research cultures than others and have a harder time gaining a sense of belonging among peers (Deem & Brehony, 2000). Also, many students are unaware of the lack of structure and self-direction expected in the post-coursework period and feel unprepared to do independent research in this stage (Gardner, 2008, 2010). On the positive side, interacting with various people and establishing relationships and networks help doctoral students handle difficulties and challenges during their studies (Baker & Pifer, 2011; McAlpine, Jazvac-Martek, & Hopwood, 2009; McAlpine & Lucas, 2011). While these findings have enriched our understanding of how doctoral students experience doctoral studies day to day, one may still wonder how those who have made it to the final stage experience the last milestone, the oral defense: How does it feel to defend the dissertation? How do doctoral candidates make sense of this experience? How similar and different are their experiences? Is it just a formality? These questions are what this research began with.

The theoretical perspective of this research was inspired by recent progress in research on doctoral writing. While the conventional view on doctoral writing stresses skills, recent studies have pointed to the relationship between research writing and the development of doctoral students' identities (e.g., Aitchison & Paré, 2012; Kamler, 2008; Kamler & Thomson, 2004, 2006, 2008; Paré et al., 2011; Rose & McClafferty, 2001). For example, Aitchison and Paré (2012) argue that for doctoral students, research writing means

"engage[ing] in the authentic discourse of their disciplinary conversations in order to make a successful transition from student to working scholar" (p.13). Kamler and Thomson (2006, 2008) pointed out that dissertation writing is *identity work*, for "the text is an extension of the scholar, a putting of 'self' out there which is either successful—or not" (Kamler & Thomson, 2006, p. 15). If the dissertation is identity work, it follows that an oral defense of it is identity work as well. The present research used identity as a theoretical lens in examining doctoral candidates' defense experiences. Following many scholars (e.g., Green, 2005; L. Hall, A. & Burns, 2009; Holley, 2009; Jazvac-Martek, 2009; McAlpine & Amundsen, 2011), I believe that doctoral students develop identities as well as develop knowledge through doctoral studies. Hence, using identity as a lens for the research makes it possible to establish a link between doctoral candidates' defense experiences and the doctoral study.

1.2 Problem Statement

Being the last milestone and culmination of the doctoral journey, the dissertation defense is personally meaningful to doctoral students. Knowing how doctoral students experience and make sense of the dissertation defense will further our understanding about doctoral education. Currently, doctoral examination is an under-researched area. In particular, no empirical research can be found in North America. The existing research, mainly found in the U.K., does not provide much pertinent information for the North American context due to the differences between examination systems. The numerous how-to guides have only provided academics' perspectives on the defense, and little has been written about doctoral candidates' own perspectives.

1.3 Research Questions

Given the gaps in the literature, this research addresses the following questions:

1. What are doctoral candidates' experiences of defending their dissertations?
2. How do doctoral candidates make sense of defending their dissertations?
3. What do doctoral candidates' defense experiences reveal about their sense of being and becoming researchers, i.e., their researcher identities?

For Question 1, I see a candidate's defense experience as starting with his/her preparation for the defense. Regarding preparation, following researchers such as Trafford and Leshem (2008), I see the preparation as long-term, which begins when a candidate enrolls into a doctoral program. Therefore, the data for the study include some of the participants' experiences during their research processes. Question 2 is intended to explore the various meanings that doctoral candidates draw from defending their dissertations, as we do not simply experience the world but we also make sense of our experiences. Question 3 highlights the theoretical lens in interpreting doctoral candidates' defense experiences. This lens ensures the central place of the doctoral candidate in the dissertation defense and sets the defense in the larger context, the doctoral process.

This study is exploratory in nature, and I view e*xperiences* as "unquantifiable facts" (Berg, 2007, p. 8). Thus, the study takes a qualitative approach. Further, it is my belief that doctoral candidates experience the defense in various ways and I want to document some of the variations. Therefore, the research is a multi-case study. *Case* is defined as each doctoral candidate's experience of making preparation for the defense, defending and reflecting on the defense experience. Eleven education doctoral candidates were recruited from a Canadian research-intensive university and their experiences from preparations to post-defense reflections were collected and examined. Institutional

documents were collected and analyzed as were observational notes of each participant's defense; additionally over 20 observations of defenses were made that were not part of the data set of the research but served as a triangulation strategy.

1.4 Researcher's Perspective

I attended the first dissertation defense in my life when I was a first-year master's student. While my memory has gone vague with time going by, I still remember the pride that the candidate (who was a middle-aged black gentleman in a grey suit) showed on his face while doing his presentation, as well as the long statement that one of the committee members gave before posing her three even longer questions. Looking back, I believe my interest in the doctoral oral exam was triggered as early as that time by the particular atmosphere in the examination room, in which the candidate was filled with both pride and humility.

Having a teaching background, I have always been interested in how students experience learning. As a master's student, I conducted a small study about how several Chinese doctoral students adapted to their doctoral study in Canada. So when it was time to decide on the research topic for my doctoral study, I chose to investigate doctoral students' experiences. I must confess that my choice of looking at the dissertation defense fell between personal interests and coincidence. The beginning of the story was somewhat like Wenger's (1998) notion of "peripheral participation." That is, as a newcomer who wanted to become a member of a community of scholars, I started communicating with old-timers in the community: professors. At the end of my master's study, I was involved in my supervisor's research project about doctoral student experiences and thus had the chance to be added to the listserv of a group of doctoral education researchers. The group

exchanged emails from time to time regarding readings and research news of the common interests of the group, and I had been listening, observing, and learning. At one time, the state of the art of doctoral education research was brought up and the dissertation defense emerged as an area in which no one was aware of any empirical research. While that conversation went into other directions, I picked up the topic and it finally became my doctoral research.

Over the years, I had been reading books, articles, how-to guides, and other materials about the doctoral dissertation defense. As my understanding became deeper, my interest became stronger. I have been an *insider* and an *outsider* in relation to my research project (Sikes & Potts, 2008). I am an insider because I am a doctoral student in education who studies other doctoral students in education. I am an outsider because I have not experienced my own defense and thus there is a distance between my own experience and the experiences that I want to investigate. This particular status of mine is both a privilege and a challenge. On the one hand, I have "a unique perspective because of the researchers' knowledge of the history and culture of people and institutions involved" (Sikes & Potts, 2008, p. 37). On the other, my findings might be biased due to my "going native" (Delamont, 2002; Stein, 2006). To overcome the latter, I kept a journal to allow an audit trail, and in analyzing the data I frequently exchanged ideas with my supervisor. Doing this research had helped me prepare for my own oral defense. Yet I feel I still need to prepare for it in my own way since each dissertation is unique and each defense is different from others.

1.5 Organization of the Dissertation

This dissertation consists of six chapters and one postscript. This chapter has provided an overview of the research project and presented the research questions. Chapter 2 reviews the literature related to the doctoral dissertation defense and proposes re-conceptualizing the dissertation defense by using an identity lens.

Chapter 3 describes the rationale for the research design and procedures of conducting the field work. Details are provided regarding the research site, ethical issues, data collection and analysis procedures, and strategies to ensure trustworthiness of the study.

Chapter 4 introduces the individual cases. This chapter provides a chronological description of each individual's experience from preparing for the dissertation defense to defending the dissertation. It particularly focuses on how each participant handled questions and demonstrated a researcher self. The cases are clustered into six groups according to the participants' prior research experience and their views about themselves as researchers.

Chapter 5 presents six cross-case themes, with the first three addressing mainly the first research question and the last three addressing the remaining two questions.

Chapter 6 re-visits the significant findings of the research, relates them to the conceptual framework established in Chapter 2, discusses the limitations of the research, and provides recommendations for practice and future research.

Following the last chapter is a short postscript where I reflect on my learning from doing this project and on my own defense experience.

CHAPTER 2: RECONCEPTUALIZING THE DOCTORAL DISSERTATION DEFENSE

> *We need to look carefully at the experiences of the candidate in order to learn those things which the accounts given by examiners and supervisors may not tell us. (Wallace & Marsh, 2001, p. 37)*

The doctoral dissertation defense is a memorable experience for doctoral students and an important event in doctoral programs. Yet how doctoral students experience it is under-researched, especially in North America. In this chapter, I summarize and critique the literature that informs this research, identify the gaps that need to be addressed, and establish a conceptual framework for the present study. Through reviewing different literatures[2] (documents, reports, journal articles, magazine articles, and how-to guides), I argue that the public doctoral dissertation defense is worth more research attention, that doctoral students' defense experiences should be more thoroughly and systematically examined, and that identity would be a useful lens in analyzing doctoral candidates' defense experience. I divide the chapter into six sections. The first three—(a) variation in the doctoral dissertation defense, (b) various perspectives on the doctoral dissertation defense, and (c) doctoral candidates' experiences—provide the broad context in which this research is situated. The last three—(d) the dissertation defense and doctoral candidates' identities, (e) performing as researchers in the dissertation defense, and (f)

[2] The literature reviewed in this chapter only includes work written in English. However, I am aware that there is literature written in other languages that may also be pertinent. For example, I have found articles in Portuguese, French, and Spanish about doctoral dissertation defenses. In the meanwhile, a Scopus search seems to show that even if this literature had been included, the existing literature documenting doctoral candidates' experiences would be still rare.

perspectives on identity—provide the basis for the theoretical approach taken in this study.

2.1 Variation in the Doctoral Dissertation Defense

The requirement regarding the oral component of doctoral examination varies from country to country although a written dissertation (or an equivalent) is usually mandatory (Hartley, 2000). In Australia, the award of the doctorate often solely depends on the assessment of the written dissertation (Council of Australian Deans and Directors of Graduate Studies (DDOGS), 2008), and only in rare cases (e.g., arts-based doctorates or at the request of examiners) is a candidate asked to have an oral defense (Dally, Holbrook, Graham, & Lawry, 2004). In the U.S.A., while an oral defense is required in most universities, it is not compulsory, for example, at the University of California-Berkeley (Swales, 2004).

When an oral defense is required, it often adopts one of two formats: being open and public or being closed and private. The first format is found in North America, Asia, and Europe (Powell & Green, 2007), and the second format is mainly found in the U.K., plus some universities in India, Japan and South Africa (Hartley, 2000). In public defenses in North America, people other than the defense committee members and the candidate may attend the defense with or without seeking permission in advance. At private defenses in the U.K. (called the ***viva voce*** or ***viva***), only two examiners (one internal and one external) and the candidate are in the room, sometimes with the candidate's supervisor being a silent observer. Both systems have exceptions. For example, there are closed and private defenses in Canada (e.g., University of Toronto) (Chen, 2008) and open and public defenses in the U.K. (e.g., University of Manchester)

(Tinkler & Jackson, 2004a). Currently, most of the research literature on the doctoral dissertation defense is found in the U.K. about its closed, private viva. No empirical research has been conducted about the open, public dissertation defense that is widely practiced in North America.

Within a country, dissertation defenses are conducted in various ways from one university to another. In the U.K., Tinkler and Jackson (2000) examined the institutional policies of 20 universities and found these institutions varied in criteria for examiner selection, guidelines for submitting examiners' reports, and statements about the function and significance of the oral examination. They thus concluded that the viva was "conceptualized and operationalized in diverse ways" (p. 179). In Canada, Hall (F. L. Hall, 2006) sent questionnaires to graduate deans of 26 universities asking them about the practice of the doctoral dissertation defense in their institutions and found that Canadian universities also differ in the practice of the oral defense in terms of the criteria for selecting the external examiner, regulations regarding the candidate's access to the external examiner's report before the defense, and the voting protocol for the outcome of the oral defense. My research (Chen, 2008) on the oral defense policies of 10 top research-intensive Canadian universities extended Hall's findings by adding more areas of variation, such as degree of openness, purpose statement of the defense, and composition of the evaluation committee.

Further variations exist at micro levels. Trafford (2003) observed and recorded examiners' questions from 25 U.K. defenses and discovered that in natural science defenses examiners' questions tended to be linear with clear opening and closing questions, whereas in social sciences defenses examiners' questions were less linear, more theme-based, and there were no clear opening and closing questions. In addition,

examiners' experiences (Trafford, 2003), examiners' behaviors (Murray, 2003b; Wallace & Marsh, 2001), and the presence of the supervisor (Hartley & Fox, 2002) all shape the dissertation defense. To some extent, each defense is unique as "a socially-constructed and contingent activity … in which multiple agendas are at work" (Park, 2003, p. 3).

Variation in the dissertation defense indicates that research conclusions drawn from one context may not be generalized to another. Currently, there is no empirical research about the doctoral dissertation defense in North America. This is a gap that needs to be addressed. Also, the micro-level variation has highlighted the uniqueness of each defense. Hence research looking at doctoral candidates' experiences should pay attention to individual differences. However, examining the micro-level alone (as has tended to be the case in previous research) makes it difficult for those without knowledge of the context to make sense of the findings and interpretations. Thus, this study situates doctoral experiences within the meso-context of departmental, faculty and institutional policies and practices.

2.2 Various Perspectives on the Doctoral Dissertation Defense

The existing research has examined the dissertation defense from different perspectives. Yet the central issues are around its purposes and its roles in doctoral education.

Purposes of the dissertation defense

Although in many countries the oral defense is a required component of the doctoral examination, it is often considered less than an examination. Jackson and Tinkler (Jackson & Tinkler, 2001; Tinkler & Jackson, 2000) found that although the viva was "an integral component of the PhD examination" in all 20 universities in their research

(Jackson & Tinkler, 2001, p. 359), other evidence suggested the oral examination had a lesser priority compared to the evaluation of the dissertation. For instance, in 40% of the universities, a candidate cannot be failed based on his/her viva performance alone. Elsewhere, the two researchers reported that 47% of the doctoral candidates in the arts, humanities or social sciences and 15% of those in natural and applied sciences were told about the examiners' decision (often passing the candidates) at the beginning of the viva (Tinkler & Jackson, 2004a), which clearly indicated that the viva did not serve as an exam in many cases. Based on these findings, Jackson and Tinkler (2000) concluded that the viva is "not, in the majority of cases, the site of decision making" in awarding the degree (p. 45).

Faculty members and doctoral students have different views about the purposes of dissertation defense. Interviews and surveys with faculty members in the U.K. revealed that many faculty members tended to view the viva as having a lesser priority as evidence of scholarship compared to the thesis (Denicolo, 2003). Yet findings from other countries indicated that some faculty members did perceive the defense as a test. Carter (2008) reported that examiners in New Zealand held diverse opinions on whether the defense was an examination or a chat; Isaac, Quinlan and Walker (1992) reported that a large number of faculty members in the U.S.A. conceived the dissertation defense as not "a mere formality" (p.226) but a test about the candidate's knowledge or in the case of team research, the independence of his/her work. In contrast, doctoral candidates tend to view the defense as an exam. Tinkler and Jackson (2004a), for example, found that doctoral candidates named "a range of examination activities" when asked about the purposes of the viva, such as evaluating "the candidate's knowledge without computer/books to aid them" and "authenticity of thesis" (p.16).

There are also controversies in the literature about whether the defense is an extension of the dissertation evaluation or a relatively independent exam about the doctoral candidate. Powell and McCauley (2002) reported that some academics felt that the U.K. viva "could not function adequately as a means of reflecting the student's expertise accurately enough for judgment to be made" (p.107). As a result, many academics saw the defense "as a means of 'polishing' the thesis and tuning the clarity of the contribution to knowledge and overall literary quality of the written work" (p.107). This is similar to what Swales (2004) found about the U.S.A. defense, which he argues "has the propensity of being a collective editorial session designed to guide candidates toward judicious revisions at the final review stage" (p.169). In Australia, Mullins and Kiley (2002) reported that doctoral dissertation examiners held two different views about the usefulness of oral exams[3]. One was that the defense examines the thesis; the other was that it examines the candidate as a potential researcher. Tinkler and Jackson (2004a) proposed that the purpose of the U.K. viva depends on the quality of the dissertation: for a good dissertation, the viva is to authenticate, develop the idea and provide advice on publication; for a failed dissertation, the viva is to confirm the fail; in borderline cases, the viva helps in the decision whether or not to award the degree. They identified three purposes of the viva, examination, development and ritual, and pointed out that ritual was rarely the purpose in the U.K. Interestingly, Swales (2004) noted three similar purposes as to the public dissertation defense in the U.S.A.:

> there is sufficiently complex agenda at work to disallow any single (or simple) function to predominant. Certainly, there remains an examination aspect, ... but equally (or close to it) there is a sense that we have been witnessing a high-level

[3] As previously mentioned, oral defenses are rare in Australia.

> editorial committee meeting. There is additionally a palpable air of what might be called celebratory relief because all participants share a sense that a long intellectual journey is in the process of coming to an end. (p.170)

Notably, B. Carter and Whittaker (2009) and Tinkler and Jackson (2004) suggested that the dissertation defense promoted student development. As B. Carter and Whittaker (2009) put it,

> Personally speaking, this opportunity for follow-up questioning, providing it is handled appropriately, provides an invaluable chance for the student to express and explore ideas in greater depth and to illuminate aspects of the written thesis that were previously less than completely clear. The viva can promote the student's thinking, can validate their work and shed light on aspects of the student's contribution to knowledge. (p.172)

This developing function highlights that what is under examination is more the doctoral candidate than the written dissertation.

Roles in doctoral education

While most of the previous literature focuses on the relation between the oral and the written, a few researchers did situate the defense in larger contexts. Trafford and Leshem (Trafford, 2003; Trafford & Leshem, 2008), for example, linked the defense to the doctoral process and introduced the concept of "doctorateness," a term they used to refer to the *synergy* of 12 elements that any doctoral level research should contain: "stated gap in knowledge, explicit research questions, conceptual framework, explicit research design, appropriate methodology, 'correct' data collection, clear and precise presentation,

full engagement with theory, cogent argument throughout, research questions answered, conceptual conclusions, and contribution to knowledge" (Trafford & Leshem, 2008, p.38). They pointed out that examiners in the dissertation defense expect the candidate to demonstrate *doctorateness*. In other words, *doctorateness* is what distinguishes a doctoral degree from other degrees. Given that the 12 elements are developed in the doctoral process, Trafford and Leshem contend that the preparation for the defense actually starts on the first day when a student enrolls in a doctoral program, rather than a few days before the scheduled defense date (Trafford & Leshem, 2002b). Placing the defense within the doctoral process is insightful since the oral defense builds upon many research activities prior to it (i.e., reading and writing, collecting and analyzing data, making decisions in the field, overcoming challenges).

Other researchers discussed the roles of the doctoral examination (including the oral defense) in connecting different academic communities. Jackson and Tinkler (2000) pointed out that the PhD examination may influence three communities: the institutional community, the professional community, and the knowledge community. They argue that the PhD examination is "one of the ways in which higher education institutions are tied into a broader community with common tasks, interests and relations of interdependence" (Jackson & Tinkler, 2000, p.48). The oral defense connects these communities by inviting external examiners, producing future faculty members, and maintaining standards/gate-keeping. Connecting the oral defense with various academic communities is relevant to this research because the dissertation defense in the university in this study is evaluated by a committee composed of a panel of scholars from different fields of research, and an external examiner of the dissertation from a different university. I will provide more detail later.

In summary, the literature about the purposes and roles of the dissertation defense portrays the complex nature of this exam, especially regarding the extent to which it is an exam and what it has been designed to examine. Two issues worth further thought are in what ways the dissertation defense develops the doctoral candidate and in what sense it connects various academic communities.

2.3 Doctoral Candidates' Experiences

Only a small portion of the existing research (mainly in the U.K.) is on doctoral candidate's experiences. In terms of preparation experiences, Tinkler and Jackson (2002) found that doctoral candidates were more likely to consult supervisors and fellow students than other resources. However, in a quarter of the cases supervisors either gave no guidance or the guidance given was not helpful, and the "grapevine stories" from fellow students might not be reliable (Tinkler & Jackson, 2002). Regarding the mock viva, only 11% of the students had one (Tinkler & Jackson, 2002), and questions in the mock viva were often significantly different from those in real vivas (Hartley & Fox, 2004; Tinkler & Jackson, 2004b). In addition, doctoral students have some confusions and doubts (such as whether they must know everything in their fields and whether it is more like a job interview or a police interrogation), which is likely due to the fact that in the U.K. doctoral students are not able to attend and observe live vivas prior to their own (see Murray, 2003b; Jerry Wellington, 2010). In terms of defense experiences, Hartley and Jory (2000) sent open-ended questions to 100 psychology doctoral graduates and found that although 85% of them passed the viva[4], nearly 40% of the passers had negative feelings; that is, their self-esteem was reduced. Wallace and Marsh (2001) and Wallace

[4] Among the rest, 11 needed to make major corrections, 3 were referred (further viva), and 1 failed (thesis rejected).

(2003), aiming to find out causes for students' negative feelings, interviewed six successful doctoral candidates in social sciences and found that the behaviors of the examiners were the major cause. Typically, a candidate complained that the external examiner talked for half an hour "on what he didn't like about [her thesis]" (Wallace, 2003, p. 103).

Other studies applied particular theoretical lenses to interpret student experiences. Nixon-Cobb (2005), for instance, reflected on her own defense experience from a feminist perspective and suggested that faculty members should "eliminat[e] worthless displays of power and control" in order to transform the dissertation defense to "an empowering experience" for the candidate (p.68). Focusing on affect experienced by the doctoral candidate in the defense, Crossouard (2011) interviewed 20 doctoral candidates from eight British universities about their preparation and defense experiences, and found that some of her participants related the viva to their past schooling and examination experiences. She suggested that the "emotional labour" (i.e., high emotions, stress and anxiety) involved in the viva should be examined within a context, or what she called "condensed historicities," which was composed of a past (candidates' personal histories and memories, mainly previous experiences of exams), present (academic cultures) and future (some participants will end up in academia and become examiners).

Other studies are not directly about student experiences but aimed to identify factors that influence the doctoral candidate's performance. Tinkler and Jackson (2002) suggested the viva was composed of three components: skills (verbal skills, thinking independently, and performing well under pressure), content (purposes of the exam), and conduct (actual local practice of the exam). They pointed out the last two "provide extensive opportunities for divergent practice," with the conduct being "potentially the

most variable … and the least regulated" (p. 90), given it was shaped by the examiners' academic and personal agendas and the interpersonal dynamics in the viva. In a similar spirit, Trafford and Leshem (2002a) also identified three sets of variables: social dynamics of the viva, emotional and scholarly resilience of the candidate, and explicit doctorateness[5] in the thesis design. The idea was that in order to perform well in the viva, the candidate needs to establish an appropriate relationship with the examiners, demonstrate explicit doctorateness and handle questions in a scholarly manner. There are a number of overlaps between the two frameworks, for example, both highlight the local practice of the viva, which is mostly shaped by the candidate-examiner relationship.

In summary, although the studies about doctoral candidates' experiences have documented preparation and defense experiences, none have documented both together. As for those particularly on defense experiences, little has been written beyond doctoral candidates' feelings in retrospect[6]. In particular, the student-examiner dynamics have been largely ignored. Most importantly, most of these studies lack a theoretical perspective (except Nixon-Cobb (2005) and Crossouard (2011)).

2.4 The Dissertation Defense and Doctoral Candidates' Identities

The relevant chapters or sections in how-to guides about the public dissertation defense in North America provide information such as the general procedure, kinds of outcomes, suggestions for preparation, strategies for presenting and answering questions, and even generic questions. Particularly, they reveal important characteristics of the open and public dissertation defense. To name a few, it is "far less threatening" (Garson, 2002),

[5] As previously mentioned, doctorateness refers to the characteristics showing that the dissertation research has reached the standards of the doctoral degree.
[6] In Crossouard's (2011) study, one participant was interviewed both before and after his defense; all the others were only interviewed after their defenses.

few people fail (Rossman, 1995), and examiners *want* the candidate to pass (Bolker, 1998; Hawley, 2003; Madsen, 1992; Ogden, 1993; Rossman, 1995). Correspondingly, a "collegial" atmosphere is often emphasized and the defense is framed as a *discussion* rather than an exam (Garson, 2002; Hoyle, 2010; Newman, Benz, Weis, & McNeil, 1997). On the other hand, the defense still "feel(s) like a major test" (Bolker, 1998, p.134), which the candidate should carefully prepares for (Bryant, 2004; Forsyth, 2010; Mauch & Park, 2003; Mullen, 2006; C. M. Roberts, 2010). Lots of this information echoes the research literature. For instance, defenses vary across universities, departments (Foss & Waters, 2007; Hawley, 2003; Madsen, 1992; Rossman, 1995), and from case to case (Biklen & Casella, 2007); it is the candidate that is being examined (Garson, 2002; Mauch & Birch, 1998; Peters, 1997); committee members' behaviors significantly shape the defense and student experiences (Biklen & Casella, 2007; Lunenburg & Irby, 2008; Ogden, 1993; R. M. Thomas & Brubaker, 2000); and the quality of the dissertation influences the functions of the defense (Piantanida & Garman, 2009).

An emerging issue is the kind of person that the doctoral candidate is expected to perform in the dissertation defense. Many books mention that the doctoral candidate is expected to be able to communicate his/her research to others (Lunenburg & Irby, 2008), think independently under pressure (Peters, 1997), meet the standards of the doctorate (Mauch & Birch, 1998), and be ready to enter a field of specialization (Garson, 2002). Also, the candidate must have thorough and critical understanding of a topic and demonstrate research professionalism and expertise in his/her area (Bolker, 1998; Fitzpatrick, Secrist, & Wright, 1998; Peters, 1997), think professionally (Cone & Foster, 2006; Mauch & Birch, 1998), and prove he/she has made original, sensible, and significant contributions to the field (Fraser & Rowarth, 2007). In relation to the defense

committee, the candidate knows more than the committee about the research topic (Foss & Waters, 2007; Garson, 2002; Newman et al., 1997; C. M. Roberts, 2010) and is a "soon-to-be colleague" (Ogden, 1993) or "at the edge of becoming a colleague" (Garson, 2002, p.224). More importantly, many how-to guides mention the transitional function of the dissertation defense (e.g., Bloomberg & Volpe, 2008; Bolker, 1998; Foss & Waters, 2007; Garson, 2002; Madsen, 1992; C. M. Roberts, 2010). That is, the doctoral candidate is transformed through official recognition from student to scholar[7]. Glatthorn (1998) brilliantly describes the tricky status of the defending candidate:

> Then the questioning will begin. This…is the most crucial part. You want to respond in a way that suggests you are prepared to enter the community of scholars: You are informed, articulate, suitably humble in the presence of your elders, but quietly confident. (p.185)

The transition and transformation talked about in many how-to guides indicate that doctoral candidates' identities are an important issue in the dissertation defense. A few researchers touched upon this as well. Murray (2003a, 2003b), for example, suggested that the viva should be viewed as a *new* communication event because of the new audience for the research work (the external examiner) and the new purpose different from writing the dissertation (orally defending it). She argues that in this new communication event the candidate *returns* to a novice status (from an expert status), which results in a crisis of *identity*. Jackson and Tinkler (2001) found in their research

[7] I agree with Piantanida and Garman (1999) on their argument that "the transformation [from student to scholar] occurs incrementally throughout the journey, rather than instantaneously as a result of grilling at the [defense]" (p.189). However, I view the dissertation defense as the official/institutional recognition of the candidate's entry into the community of scholars.

that for some candidates, the viva experiences led to questioning of their academic competence. If we acknowledge the centrality of doctoral candidates in the dissertation defense, it follows that we should foreground doctoral candidates' identities. Yet in the literature to date, this issue still remains implicit. This study foregrounds doctoral candidates' identities and looks at how doctoral candidates perform as researchers in the dissertation defense.

2.5 Performing as Researchers in the Dissertation Defense

Producing researchers who are able to conduct independent research and make original contributions appears to be the primary goal of PhD education internationally, as explicitly indicated in various documents (Council of Australian Deans and Directors of Graduate Studies (DDOGS), 2008; Council of Ministers of Education Canada, 2007; Joint Quality Initiative, 2004; Park, 2007). Researchers have also called for more attention to the role of doctoral education in constructing doctoral students' identities (Dall'Alba & Barnacle, 2007; Green, 2005; Lovitts, 2005, 2007, 2008). Currently, the relevant literature has identified multiple kinds of identities of doctoral students[8], yet little has been written particularly on researcher identities, despite a few studies on the development of research independence (e.g., Baker & Pifer, 2011; Gardner, 2008; Hakala, 2009; Laudel & Glaser, 2008) and some personal reflections on trajectories of becoming researchers (e.g., Batchelor & Di Napoli, 2006; Quaye, 2007). No research has connected doctoral candidates' researcher identities with the dissertation defense, which is the culmination of the doctoral education process.

[8] For example, scholarly identity (e.g., Kamler & Thomson, 2006, 2008; Thomson & Walker, 2010), academic identity (e.g., Colbeck, 2008; Jazvac-Martek, 2009; McAlpine & Amundsen, 2009), professional identity (Holley, 2009; Malfroy & Yates, 2003; Sweitzer, 2009), disciplinary identity (e.g., Golde et al., 2006), social identity (Gardner, 2010).

This study looks at doctoral candidates' experiences of defending their dissertations by focusing on their performances of researcher identities in the questioning session. Here I review two studies that have offered helpful perspectives on the candidate-committee interaction. Recski (2005) examined how modality words (e.g., *will, would, can, should; exactly, indeed, actually, obviously, basically, primarily, accurately, strictly, and necessarily*) were used by two PhD candidates (one in biology and the other in social psychology) and suggested that the candidates used these words to convey "an image of reliability and knowledgeability" in answering questions (p.21). He found, for example, that when the candidates were confronted by what they call "face-threatening" questions, they tended to answer them by firstly using hedging (e.g., *I think, I guess, it seems, I hope, I expect, tend to, I inferred that, I figured that, I felt that*) and then "switch[ing] to statements emphasizing their own points of view" (p.19). While interaction at the language level was not the focus of the present study, the strategies of handling difficult/challenging questions provided a starting point. In another study, Swales (2004) analyzed the transcripts from three[9] PhD defenses in the U.S.A. focusing on the discoursal properties of the candidate-committee conversation in each defense, such as turns-taking between the candidate and the committee members, language used to signal the end of the defense, references to the written dissertation, and number of laughs in the conversation. He argued that although public dissertation defenses often appear to be informal, they are not "meaningless rituals" as some researchers proposed because

> everybody wants to do well: the chair to demonstrate control of events and to ensure the safe passage of the candidate; the departmental members to

[9] As Swales noted, there were originally four defense recordings; but in one case, the questioning part was missing because the defense committee left the room with the recorders to a different room to ask questions.

> demonstrate their expert knowledge and yet show their humanity; the outside member to showcase the relevance of his or her own specialization; and the candidate to proudly defend the document that the committee members have (one hopes) all read and yet be ready to accept that his or her document, while meeting the institutional requirement of "making an original contribution to knowledge," is still not quite good as it might be. (p.169)

Underlying this role perspective is a sense of identity performance in the defense. Although Swales (2004) did not particularly focus on the role of the candidate, it is clear that the candidate's role described here is a researcher being both proud and humble simultaneously, similar to Glatthorn's (1998) description presented earlier.

2.6 Perspectives on Identity

The term *identity* appeared in publications as early as 1900s and gained dramatic popularity in social scientific analyses when Erik Erikson published some groundbreaking works in the 1960s[10] (Coté, 2006). Now, the concept of identity is being studied in multiple disciplinary fields, such as social psychology, sociology, education, and is defined in various ways (see Burke, Owens, Serpe, & Thoits, 2003; Holland, Lachicotte Jr., Skinner, & Cain, 1998; Leary & Tangney, 2003; Stets, 2006). Basically identity means "who I am," yet it may refer to different things depending on the perspectives taken (see Gee, 2000/1). In the field of social psychology, for instance, researchers distinguish at least three kinds of identities: personal (based on personal characteristics), social (based on social categories), and role (based on social roles) (Stets, 2006). In

[10] The relevant works referred to in Coté (2006) are *Childhood and Society* (2nd ed.) published in 1963 and *Identity: Youth and Crisis* published in 1968.

education, teacher identity has been discussed for decades and other identities, such as academic identity and professional identity, are gaining popularity. In sociology, ethnic identities, cultural identities, racial identities, gender-related identities are all popular research areas. Coté (2006) notes that "because there are so many different uses of the term, … it leaves us in a state of confusion about what identity 'is'" (p.6). She thus called for a "consistent use of more specific and precise terms" when referring to identity. In this research, I focus on doctoral candidates' *researcher* identities as performed in the dissertation defense. In the following, I conceptualize doctoral research learning as social practice and then define doctoral students' researcher identities by (a) *membership* in the community of researchers in certain fields, (b) *meaning* made out of participating in research practice, and (c) *trajectory* involving researchers' past, present, and future. I then argue that identities are composed of three aspects: (a) how one thinks about oneself, (b) how one performs, and (c) how one is recognized by others as a certain kind of person.

Research learning as situated, social practice

PhD learning involves various activities beyond learning to conduct research. However, given that the oral defense is based on a piece of a research work, the focus of my study was on learning to do research and developing as a researcher.

PhD learning has been conceived as similar in many ways to the notion of apprenticeship that Lave and Wenger (1991) talked about when introducing situated learning (Golde, 2010; Walker et al., 2008). PhD students learn to become researchers by conducting a research project (whether it is empirical or theoretical) under the guidance of senior scholars (supervisor, co-supervisor, and the advisory committee). This learning is *situated* in that it takes place within a historical, social and cultural context. That is,

students build their research work on relevant previous research, interact with other researchers in the same research field/area—*virtually* through citing their work in dissertations/research reports and publishing research findings in academic journals and *physically* through having supervisory meetings and attending conferences. Also, students have to follow general rules and codes concerning conducting research in their broader disciplinary fields and specific rules and codes concerning conducting research in their specific research areas and their institutional settings (Golde, 2010). In this sense, PhD research learning goes beyond the supervisor-supervisee relationship. It involves a set of relations with other people and is a social practice.

Identities as memberships

Through doctoral learning, doctoral students gradually become independent researchers (Gardner, 2008; Lovitts, 2005, 2008). The dissertation defense is an institutional recognition of doctoral students' entry into a community of scholars. Drawing on Wenger's (1998) communities of practice (COP) approach to identity, doctoral students' researcher identities can be defined by their sense of being members in particular researcher communities, which are composed of researchers working in similar research areas/fields. Wenger (1998) suggests that a community of practice must have three dimensions: (a) mutual engagement of participants, (b) negotiation of a joint enterprise, and (c) development of a shared repertoire. According to this definition, doctoral students engage in at least one local community and one global community, given that they constantly interact with their thesis advisory committee, other academics and fellow students (local), as well as with researchers in their research areas through attending conferences and publishing in various venues (global). They participate in the

practice of these communities and contribute to the development of these communities through their research work. Wenger defines membership by knowing and not-knowing. He notes,

> membership in a community of practice translates into an identity as a form of competence. An identity in this sense is relating to the world as a particular mix of the familiar and the foreign, the obvious and the mysterious, the transparent and the opaque. …. In practice, we know who we are by what is familiar, understandable, usable, negotiable; we know who we are not by what is foreign, opaque, unwieldy, unproductive. (Wenger, 1998, p. 153)

Therefore, knowing and not-knowing are what distinguish "newcomers" (doctoral students) and "old timers" (senior, experienced researchers). Doctoral study is a process in which doctoral students learn "the unfamiliar and foreign" (their field of specialization and how to conduct research) and change them into the familiar (knowledge about and skills of doing research) in order to become members in the community of researchers in their fields of specialization. So identity is membership, which is represented by knowing (competence). In the final oral defense, doctoral candidates are expected to demonstrate their knowing in answering the evaluation committee's questions in order to be accepted as members.

While Wenger (1998) believes that "we define who we are by the ways we reconcile our various forms of membership into *one* identity" (p.149, emphasis added), other scholars argue for multiple memberships/ identities and identities between communities. For example, Handley, Sturdy, Fincham, and Timothy (2006) argue that the COP theory actually promotes "the compartmentalization of practices (one for each

community setting)" and hence views learning/identity as "fully situated with little possibility of transfer or translation across contexts" (p.647). Fuller (2007) pointed out that learning takes place in crossing communities and that people bring knowledge from outside. As a result, Fuller (2007) contends that novices and experts in a community are relative rather than absolute. As a matter of fact, research on doctoral learning has provided evidence for these arguments. For instance, Wallgren and Dahlgren (2007) examined the learning environments of a group of Swedish doctoral students working in industry while completing their PhDs and found that they learned to conduct research through "brokering" between two communities: industry and academia. Hockey and Allen-Collinson (2005) found that a group of doctoral students in arts and design went through a process of negotiating their identities as "creators-researchers." Multiple identities/memberships and inter-community identities are relevant for this research because doctoral students may already be involved in research, teaching, and administrative activities (Jazvac-Martek, Chen, & McAlpine, 2011) and have diverse backgrounds (Golde & Dore, 2001). Especially in the field of education, many students have been practitioners in different fields for years before embarking on the PhD study (Thomson & Walker, 2010). Doctoral students are members (novice or senior) in other communities besides the community of researchers in their fields of specialization, and there is possibility of learning taking place when crossing communities and identities developed between travelling across communities.

Identities as meanings

We constantly make sense of our day-to-day experiences and produce meanings from them. Meaning making is "part of who we are" (Wenger, 1998, p. 201). From a

community perspective, Wenger (1998) argues that all community members produce meanings of their own about participating in the activities of the community. These meanings form what he called an *economy of meaning*, "in which different meanings are produced in different locations and compete for definition of certain events, actions, or artifacts" (p.199). Firstly, this notion acknowledges that different individuals produce different meanings in practice. Regarding doctoral experiences, Meyer, Shanahan, and Laugksch (2005) reported that doctoral students held various conceptions (including misconceptions) about what doing research meant. As defending the dissertation is part of the doctoral practice, it is also a site where doctoral candidates make sense of what being a researcher means. An assumption of this research was that doctoral candidates' meanings about being/becoming researchers in the dissertation defense varied.

Further, underlying the notion of *economy of meaning* is a power relationship[11] between newcomers and old-timers. The COP approach to identity makes it very clear that not all meanings have equal status and that some meanings have more currency than others. Hence some meanings about being researchers held by doctoral students (novice members) may conflict with those held by their supervisors and other experts (old timers) in their fields of research. Wenger uses *ownership of meaning* to refer to "the ways meanings, and our ability to negotiate them, become part of who we are" (p.201). New members are less privileged in negotiating meanings than old-timers in a community, although they may have some negotiating space. In terms of the dissertation defense, doctoral candidates may hold various views about what it means to perform a researcher in the defense, yet these meanings may not align with those of the evaluation committee.

[11] I agree with scholars such as Fox (2000) and Roberts (2006), who pointed out that power was not fully addressed in the COP theory and thus was one of its major limitations.

In other words, there may be discrepancies between the committee's expectations about doctoral candidates' performance and the candidate's actual performance guided by their understandings about what defending one's dissertation means.

Identities as trajectories

Identity is a product and by-product of learning. As learning forms a trajectory, the development of identity forms a trajectory (Wenger, 1998). The notion of trajectory stresses the continuity of identity work through time. As Wenger (1998) notes, "our identities incorporate the past and the future in the very process of negotiating the present" (p.155). In this research, I view doctoral candidates' researcher identities revealed in the dissertation defense (the present) as being inseparable from doctoral research practice during the doctoral process (the past) and continuing developing after the defense (the future). In other words, rather than viewing the two-hour oral examination as forming or developing doctoral candidates' researcher selves, this research was intended to concentrate on how a researcher self under development is demonstrated and performed in the defense.

Identity trajectories are inseparable from *membership* and *meaning*. A particular trajectory attached to a particular identity is formed by events and activities facilitating a membership as well as difficulties and challenges impeding this membership. Individuals draw meanings from both positive and negative experiences and these meanings become part of an identity. Hence identity trajectories are not linear but contain detours and interruptions. One of the assumptions of this research was that challenges in one's doctoral process influence one's researcher identities. Accordingly, doctoral candidates'

researchers identities performed in the dissertation defense were related to the process of their conducting the dissertation research.

Three aspects of identity

Building on activity theory, especially the relationship between structures and individuals, Tonso (2006) defined identity by three aspects: *thinking about oneself as, performing*, and *being thought of as someone.* In her research, the first construct was represented by the terms that a group of student engineers used to call themselves (e.g., nerds) and the meanings attached to these terms. It was found that while the terms revealed how these students characterized campus engineer identities, they did not necessarily correspond to their day-to-day performance as engineers, and further, to who were (not) recognized as engineers. As a result, Tonso called our attention to all three aspects of identity. The three aspects influence one another. For example, doctoral candidates' self-identifications in their research communities (i.e., thinking about themselves as researchers) influence and are influenced by how they perform researcher selves in the defense; as well, their performance in the defense as researchers influences how they feel they are recognized as such by the defense committees (being thought of as researchers).

I visualize my perspective on doctoral students' researcher identity development in Figure 2.1. The red zigzag line with an arrow at one end represents the temporality of doctoral researcher identity development. The dashed lines indicate that the development of doctoral students' researcher identities may begin before students' enrollment into a doctoral program and continue developing after they graduate. I am not using a straight line because there are barriers, challenges and detours along the way of becoming

researchers. The multiple circles represent the possible communities of practice that doctoral candidates identify with during the doctoral process (for example, a community of lecturers at a certain university, a community of researchers working on a project not related to the dissertation). Some communities overlap and others do not. Memberships in these communities involve different identities of doctoral candidates; some memberships directly contribute to doctoral researcher identity development and others do not. Doctoral students constantly make sense of research experiences and develop meanings of being researchers. Throughout the doctoral process, doctoral students' researcher identities always involve three aspects: thinking about themselves as researchers, performing as researchers, and being thought of as researchers by others. The dissertation defense, as the culmination of the doctoral study, is a site where doctoral candidates perform researcher identities.

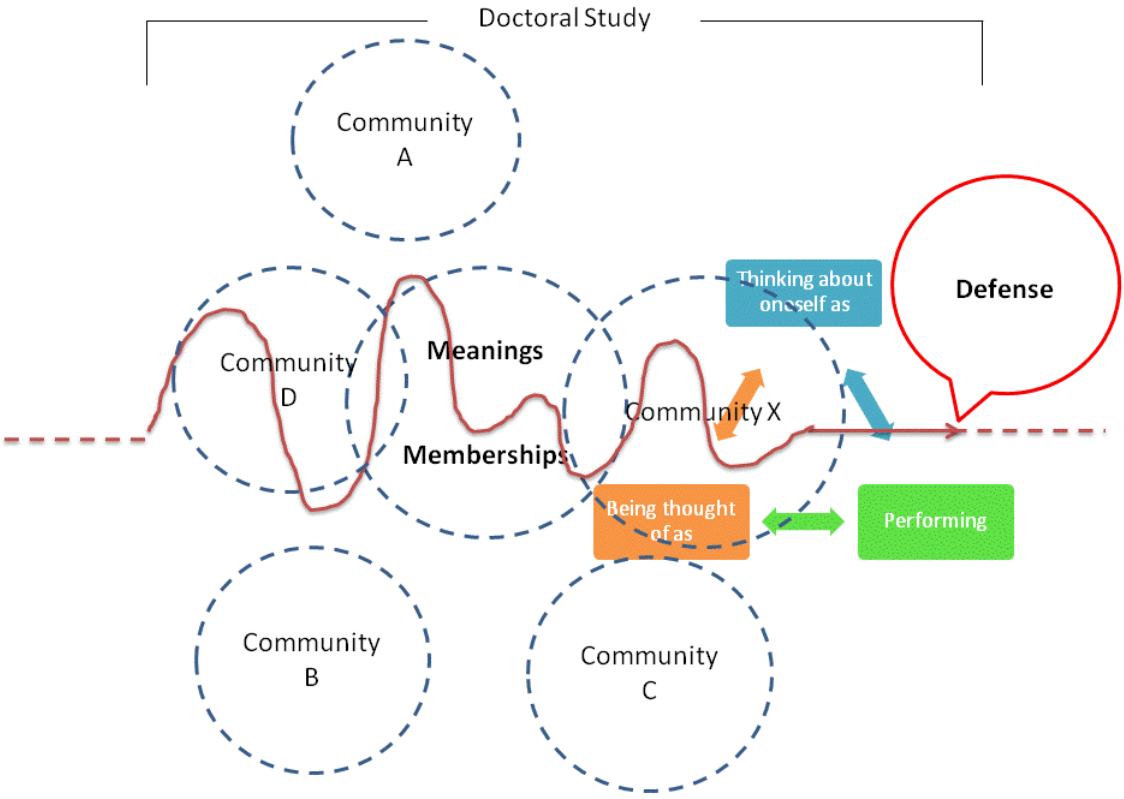

Figure 2.1 Doctoral Researcher Identity Development and the Dissertation Defense

CHAPTER 3: METHODOLOGY

[Methodology is] the activity or business of choosing, reflecting upon, evaluating and justifying the methods you use. (J. Wellington, 2010, p. 129)

This chapter describes the rationale for the design of this research and the field practice. Very briefly, the research was guided by a constructivist paradigm, took a qualitative research approach, and was a multi-case study. The participants were 11 doctoral candidates from a faculty of education at a Canadian university, and the data were composed of semi-structured pre- and post-defense interviews, notes from observations of the defenses, background information of the participants, and institutional documents. I begin with my choice of the research approach and then present how data were collected and analyzed. Following this is a description about the ethical challenges that I encountered in the research process and my solutions. Finally, I present how trustworthiness was ensured and how the researcher's position and identity impacted on the research.

3.1 Research Paradigm

A paradigm is "a basic set of beliefs that guide action" (Denzin & Lincoln, 2005, p. 183). Among the four major paradigms widely acknowledged by researchers—post-positivism, constructivism, advocacy/participatory and pragmatism (Creswell, 2007; Guba & Lincoln, 2008)—constructivism was the one that guided this research. This paradigm has three major ideas: (a) we make subjective meanings of our experiences, (b) our meanings are diverse and multiple, and (c) our meanings are formed by interaction with others and are shaped by historical, social, and cultural contexts. The goals of the

present research correspond with these ideas in that it explores how doctoral candidates make sense of their defense experiences (subjective meanings) in various ways (multiple meanings) by framing the dissertation defense as part of students' doctoral journey and a practice involving various communities (interaction and socio-cultural contexts). In other words, the present research is in nature an exploration of the research participants' meanings, my (the researcher's) meanings, and the interaction of these meanings. Overall, the essences of constructivism exist in the present research: being dialectical (interaction between researchers and participants) and being hermeneutical (the researcher's interpretation) (Creswell, 2007).

3.2 Qualitative Approach

This research aims to answer three questions: (a) What are doctoral students' experiences in the dissertation defense? (b) How do they make sense of their experiences? and (c) What do these experiences reveal about their sense of being and becoming researchers? In other words, the purpose of the research is to explore how doctoral candidates *experience* their dissertation defenses, how they *interpret* their experiences, and how *I*, the researcher, interpret their experiences. The qualitative research approach is appropriate to achieve this purpose because it inquires into the meanings that individuals make of their lives (the participants' meanings and the researcher's meanings) (Creswell, 2007; Denzin & Lincoln, 2008). Packer (2011) pointed out that the essence of the qualitative inquiry is "plural realism:"

> Studying humans as objects—albeit complex and sophisticated objects—is not the same as studying humans as beings who live in particular cultural and historical forms of life and who are made and make themselves as specific kinds of subjects.

> What we need is a human science that is able to grasp this "constitution". Such a science would not abandon objectivity in favour of relativism, either epistemological or cultural. Rather, it would adopt a moral and epistemological pluralism resting on what has been called a "plural realism"…. Such a science, I suggest, is exactly what qualitative inquiry is, properly understood. (p.5)

This research was set up to document variations of doctoral students' meanings of their defense experiences and to provide an interpretation from an identity perspective. In addition, answering the research questions entailed a collection of "unquantifiable data" (observations, accounts of the defense experiences and meanings of the experiences) (Berg, 2007). This could only be achieved by the qualitative approach.

3.3 A Multi-Case Study Design

The rationales for a multi-case study design were three-fold. First, as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident" (Yin, 2003, p. 13), the case study methodology foregrounds the context for a research problem. In the present research, context for a case was composed of the institutional and departmental policy about the doctoral dissertation and defense, composition of the defense committee, the dissertation topic, and the candidate's background (including his/her experience in the dissertation research process and possible future career areas). The boundaries between some contextual elements and the phenomenon under study (doctoral candidates' defense experiences) are not clear; for example, the oral defense policy in the institution can be seen as part of the candidate's experience since the policy is practiced in the defense; similarly, composition of the

defense committee can also be part of a candidate's experience given that those on the committee shape his/her defense experience. Second, given that there is no empirical research in North America, the present research is *exploratory* in nature. Case studies help achieve this purpose by using a manageable sample to gain deep understanding of each case. Actually, this design has been proven to be useful in a few earlier studies in the U.K. (e.g., Wallace, 2003; Wallace & Marsh, 2001). Lastly, literature has suggested that doctoral students' experiences vary. Multi-case studies better capture the variability of candidate experiences than single case studies and enhance the generalizability of the research findings (Yin, 2009).

Stake (1995) categorizes case studies into two types: intrinsic and instrumental. An intrinsic case study focuses on learning from the case, and an instrumental case study focuses on learning about the *issue*, or research questions (Stake, 1995, p. 24). The current research fell into the instrumental category. In other words, I used the cases as instruments to understand the issue of how doctoral candidates experienced and made sense of their dissertation defenses.

3.4 The Research Site

The research was carried out at one of the six major PhD-granting universities in Canada[12] (Maheu, 2007). Documenting disciplinary differences between dissertation defenses was not the purpose of the study. Therefore, I only chose one faculty, the faculty of education, where the doctoral dissertation topics were more understandable for me.

The faculty has over 200 PhD students and grants 20-30 doctorates per year. It has four academic units, for which I use pseudonyms of Departments A, B, C, and D.

[12] These six universities grant over 50% of the total doctoral degrees in Canada (Maheu, 2007).

Departments A and B are larger than Department C, and Department D is the smallest of all. The participants in the research came from the first three departments, for Department D is much smaller and did not graduate any students during the data collection period for this research. The three departments offer PhDs in a range of specializations and seem to have different departmental cultures. For instance, most students in Department A work alone on their individual projects, whereas many students, though not all, in Department B have the opportunity to work in research groups with others.

The dissertation defense at this university is composed of three sessions: the private pre-defense meeting of the defense committee to review the candidate's profile and establish the order of questioning, the public section for the candidate to present the research and answer questions (20 minutes for the presentation and 60-90 minutes for the questioning), and another private meeting of the committee for making the final judgment. The dissertation defenses in Departments A and B are normally held in the conference room of the Education Building. Department C is located in another building and their defenses are often held in the auditorium in that building. A week or so before each defense, the PhD program coordinators in Departments A and B will send an email message to all students and faculty members in their department publicizing an upcoming defense. The text of the mail indicates the candidate's name, the supervisor(s)'s name, the title of the dissertation, and the time and location of the defense, with the bottom line reading "All are welcome to attend." In both departments, candidates may request that their defense not be publicized. In Department A, posters will be put up on almost every floor of the building, usually printed in color paper, indicating the same information as in the email. In Department C, the coordinator emails the doctoral students and faculty listserv and sometimes sends emails to Department A. In all three departments, the

defense is open to the general public (unless the candidate prefers a private one). Therefore, it is common for doctoral candidates to have their family and friends at the defense.

3.5 Data Collection

Collecting multiple sources of data enhances the trustworthiness of case study research and can provide richer contextual information for the cases (Yin, 2009). The data for this research were composed of (a) institutional guidelines and documents regarding the doctoral examination, (b) the participants' background information, (c) pre- and post-defense interviews with the participants, and (d) observation notes from the defenses. In addition, I attended over 20 defenses before, during and after the data collection period and took extensive observation notes from them. I used this "extra" information to familiarize myself with the defense culture in the faculty and to triangulate, to some extent, my findings from the cases included in the research.

Collecting institutional guidelines and documents

The institutional guidelines and documents were downloaded from the website of the university, including information about submission, evaluation, and processing of doctoral dissertations, nomination of internal and external examiners, and conduct of the oral defense (for example, procedures and criteria for appointing the oral defense committee, procedures for scheduling and conducting the defense, what will happen after the defense). The faculty and the three departments do not draw on any other policy documents beyond those of the university.

Recruiting participants

This research aimed to document doctoral candidates' experiences from preparing for their defense through their defense to their reflections on the defense experiences. Correspondingly, the potential population was those who had recently made an initial submission of their dissertations (thus were expecting a defense in a couple of months) or those whose defenses had been scheduled in days or weeks.

Once my ethical application was approved, I emailed the Dean of the Faculty to let him know about my research. I also had a brief talk with him in an informal faculty meeting to make sure that he knew about my research. I then emailed the graduate coordinators of the three departments and set up meetings with them. Two recruiting strategies were used. I first sent my recruitment email to the coordinators and asked them to distribute it to the department. When this strategy failed, I contacted the coordinators to request the names of the candidates who would defend shortly. In the faculty, it is prohibited for the coordinators to provide students' email addresses to a third party. As a result, I had to search the email directory of the university to find the potential participants' email addresses, and the majority of the participants (except two that I personally knew) were contacted by the emails that I found in this way. I then sent out an invitation for participation. During the period from April 2009 to August 2010, 14 doctoral candidates voluntarily participated in this research. Three were recruited for piloting purposes and 11 were the final participants in this project. All 11 participants were contacted when their dissertation defense had been scheduled to be held in 3-4 weeks.

In recruiting the participants, I gave priority to accessibility, or in Stake's (2006) words, "opportunity to learn." Also, given that the potential population was small and that

the participation was completely voluntary, I did not intentionally control the variability of the participants. But I did contact the coordinator of Department C to recruit participants from that department when I realized that there was no participant from there.

According to my records, which were based on the coordinators' publicizing emails and the information that I collected from them, there were 27 doctoral defenses in the faculty during the data collection period (17 months in length). The participants in this research thus accounted for half of the doctoral candidates that defended their dissertation during the period. The majority of the participants came from Departments A and B, which have more doctoral students than Department C. The gender ratio was unfortunately non-representative compared with the university statistics, which indicate that in Education there are twice as many female PhD graduates as male. However, the study did include both genders and there were slightly more female participants than male ones.

Of the 13 students that did not participate, six were not contacted either because my schedule did not allow me to attend their defenses or because I knew their defense times too late. Of the remaining seven students that I contacted by email, one replied with a straight "no" without explanation, two replied "yes" but later stopped responding, and the other four did not reply.

One week prior to each defense, I asked the program coordinators for the name of the Chair for the defense, and then emailed this professor to inform him/her of my presence and note-taking in the defense. On the defense day, I attended the public session in person and took observation notes.

Collecting participants' background information

I emailed a demographic information form to each participant a few days before their pre-defense interview and asked them to complete and return it to me by email. Nine participants returned their forms, one completed the form before the post-defense interview, and one did not return the form[13]. This form collected basic demographic information about the participants (e.g., age, nationality, languages, area of study), and some information about their past (reasons for doing a PhD, previous education), present (dissertation submission time, numbers of publications and presentations, job position), and future (position they want to hold immediately after graduation and the possible career path). I also collected a copy of the pamphlet distributed before each defense that contained the candidate's educational background, publications and conferences, title of the dissertation, composition of the defense committee, and an abstract of the dissertation. In addition, I visited some of the participants' public web pages for further information about their background (For example, the participant who did not return the demographic form has a public web page where most of the information in the demographic form can be found.).

Pre- and post-defense interviewing

In the last chapter, I argued, by citing Wenger (1998) and Tonso (2006), that identity is not only claimed but also practiced. Yet in this research, doctoral candidates' researcher identities were studied through their narratives: their answers to questions in pre- and post-defense interviews. While interviewing has been used in research involving identities, the link between identity and narrative is not straightforward. Clandinin and

[13] Both interviews for this participant were conducted by phone, so I did not have the chance to ask him to complete the form. However, I managed to find his curriculum vitae on the website of the institution where he holds a teaching position.

Connelly (2000) believe that experience "happens narratively" (p.18), and Mishler (1999) argues that narratives are "identity performances" because "[w]e express, display, make claims for who we are – and who we would like to be – in the stories we tell and how we tell them" (p.19). Sfard and Prusak (2005) pointed out that "it is our *vision* of our own or other people's experiences, and not the experiences as such, that constitutes identities" (p.17, emphasis in original). Drawing from all these ideas, this research was founded on the assumption that doctoral candidates' researcher identity in the dissertation defense could and should be studied by examining doctoral candidates' accounts about their experiences. I discarded the idea that identity stories are life stories whereas what researchers collect is only segments of these stories (see Juzwik, 2006). Instead, I follow Sfard (2006) to argue that when we describe our experience using language, we have already gone through a process of meaning-making. Therefore, identity is researchable through examining narratives.

I conducted all pre-defense interviews 3-7 days prior to the defenses and post-defense interviews 1-7 days after the defenses. The interviews were semi-structured, based on pre- and post-defense protocols, and each lasted 30-60 minutes. The two protocols were revised once after the three pilot studies were completed (from May to September 2009). That is, I added two questions to the pre-defense interview protocol, one about the participant's experience of doing the dissertation research, the other about their anticipation of difficult/challenging questions in the defense. For the post-defense interview protocol, I deleted a few questions that were unclear or less productive (for example, "Could you tell me a moment or two in your defense in which you felt *good* about yourself?" "If I ask you to name one or two things you have learned from your defense, what would they be?") and added one question about the revisions to be made to

the dissertation and another question about the possible impact of the defense on the candidate's sense of being a researcher.

The final version of the pre-defense interview protocol contains 10 questions: nine soliciting the participants' accounts of their preparation for the defense (experience), their understanding of the dissertation defense (meaning), and their perceptions of doing research and being a researcher (researcher identity); and one asking about the participants' previous doctoral experience (meaning). The post-defense interview protocol contains 15 questions, asking about candidates' general reaction to their defense experience (meaning), what questions were easy, challenging, and surprising and how they handled them (experience and meaning), self-evaluation of their performance (meaning), revisions to be made to the dissertation (experience and meaning), and whether the defense has influenced their thoughts about being researchers and how (researcher identity).

All pre-defense interviews and six of the post-defense interviews were conducted by phone because the participants lived in several different places due to work or family situations (see Table 3.1).

Table 3.1 Formats of the Interviews with the Participants

Case	Pre-defense interview	Post-Defense interview
Bonnie	Phone	Face-to-face
Hank	Phone	Face-to-face
Heather	Phone	Face-to-face
Helen	Phone	Phone
Karen	Phone	Phone
Larry	Phone	Face-to-face
Laura	Phone	Phone
Maria	Phone	Phone
Martin	Phone	Phone
Max	Phone	Phone
Patrick	Phone	Face-to-face

As a result, the "interview context" was lost to some extent, such as the physical locations, facial expressions and body languages of the participants (Neuman, 2007). However, I did ask follow-up questions whenever I felt that further information was needed or that the tone of the participant sounded like he/she had more to tell.

Observing the defenses

I attended and observed the public sessions of all 11 defenses[14] (in some cases the following celebrations) and took extensive notes in and after leaving the field. Using a field notes protocol (see Appendix A), I collected the following information: the physical setting of the examination room, the number of the committee members, the number of people in the audience, the procedure of the defense (i.e., rounds of the questions, the approximate duration of the committee's pre- and post-defense meetings, the durations of the presentation and the questioning session, outcome), content of the presentation, sequence and content of the questions and the candidate's answers[15] (including pauses and hesitations). I also drew a spatial map that recorded the seating of the candidate, committee members and myself. During and immediately after I left the examination room, I added my impression, inference, and feelings about the defense.

Research observers can be perceived as intrusive (Angrosino, 2005). One participant actually expressed her concern about my presence at her defense. To reduce intrusiveness, I did not ask questions during any of the 11 defenses and always avoided sitting too close to or facing the candidate.

[14] In all cases, I stayed until the Chair of the evaluation committee announced the outcome of the oral examination.

[15] Audio-recording of any defense is strictly prohibited at this university, so it was impossible for me to retrieve the exact answers of the participating candidates.

3.6 Handling Ethics

"Most controversy about the ethics … has … arisen at the level of practice, rather than principle" (Murphy & Dingwall, 2001, p. 340). Handling ethical issues in the field was a difficult part of this research.

Before recruiting participants, I acquired the Certificate of Ethical Acceptability of Research Involving Humans from the Research Ethics Board II of McGill University. This certificate was renewed once during the study. I addressed all three issues that the Board recommended: (a) checking with the thesis office of the university under research regarding whether audio-recording of the open session of the defense was permitted, (b) seeking permission of the chair of each defense for my note-taking during the public session, and (c) modifying the committee questions to protect the questioners' identities if any questions would be reported in the dissertation or any other publications. I contacted the thesis office by email, and their response clearly indicated that audio-recording of the public session was prohibited. Prior to each defense, I emailed the doctoral program coordinator of the department to request the name of the chair. I then sent an email message to this professor to seek his/her permission for my note-taking. On the defense day, I met with the chair at the door before the public session, identifying myself with him/her and briefly introducing my research. On one occasion when the defense started earlier than the scheduled time and I missed the opportunity to talk with the chair, I talked to him after the defense and had a meeting with him in the following day. Three chairs emailed me back asking whether I had acquired permission of the doctoral candidates. Another chair asked whether I would also observe the private session for making the judgment (and I said "no."). Finally, all 11 chairs gave me permission for my observation and note-taking during the public sessions of the defenses.

As for the participating doctoral candidates, this research was guided by four basic ethical principles: Non-maleficence (not harming participants), beneficence (producing benefit for participants), autonomy/self-determination (respecting participants' values and decisions), and justice (treating participants equally) (Beauchamp, Faden, Wallace Jr., & Walters, 1982; Christians, 2007; Murphy & Dingwall, 2001). I did not foresee any harmful consequences of participation. However, in one case, the participant emailed me saying that my observation would make her uncomfortable at the defense. After I explained the purpose of my observation and promised that I would not ask questions, she allowed me to observe.

I asked all participants to sign a hard-copy informed consent form. However, six participants were not able to do so due to schedule conflicts. For these participants, I emailed them an electronic consent form and provided a link so that they could sign the consent online. Finally, all 11 participants signed the consent, physically or electronically. The participants were all reminded of anonymity and confidentiality, by email or face-to-face, at all phases of the data collection. Each participant was assigned a pseudonym, and the information in the data that might reveal the participants' identity was removed or replaced with comparable information. All electronic data were stored on my computer with password protection, and all original hard copies of the data were stored in a locked cabinet. Following Glesne's (1999) critique that researchers are often "exploiters," who take much and give little, I provided each participant a "tip sheet" based on my reading of the relevant literature after the pre-defense interview to help the participants prepare for the defense. My informal conversation before the post-defense interview indicated that at

least half of the participants felt the tips helpful[16]. After each post-defense interview, I emailed a resource sheet that listed links that might help the participant with his/her job search and career development.

Some ethical issues resulted in limitations being added to the study, which I will talk more about in the last chapter of this dissertation. For example, as audio-recording of dissertation defense is prohibited at the researched university, I was not able to retrieve the complete interaction between the candidate and the committee, which would have greatly enriched the findings. Also, I was not able to reveal the topics of the participants' dissertation for confidentiality considerations, which, as important contextual information, would help readers better understand the findings.

3.7 Data Analysis

I took an *interpretivist* approach (Miles & Huberman, 1994) in analyzing the data. One advantage of this approach is, as G. Thomas (2011) said, that "interpretive researchers assume that the social world is indivisible. It is complex and we should study it in its completeness" (p.126). The data collection and analysis for the research intertwined (Hesse-Biber & Leavy, 2005) in that a preliminary analysis of the data (listening to the recording of each pre-defense interview, reviewing the participant's demographic information and field notes so as to familiarize myself with the case) was conducted before doing each post-defense interview. When the data collection was completed, I first created 11 files for the 11 cases and one file for the university guidelines and policy documents using the qualitative data analysis software program

[16] To a certain extent, this tip sheet helped the participants' preparation for the defense, for example, it might help relieve some of the participants' nervousness by confirming them that not being able to answer a few questions was normal. But I do not think that it had substantively changed their performance in the defense.

MaxQDA. I then went through all three steps recommended by Miles and Huberman (1994): (a) data reduction, (b) data display, and (c) conclusion drawing and verification. I began the analysis by examining the university guidelines and documents in order to have a sense of the institutional context for the research. I then read and coded the data for each individual case. Finally, I compared and contrasted the cases to find similarities, differences, and new themes across the cases. The following sections provide details about how I analyzed different types of data.

Analyzing university guidelines and policy documents

My purpose for reading the guidelines and documents was to understand how the university conceptualizes the doctoral dissertation evaluation and the defense, the nature of the defense, and the expected experience of the doctoral candidate. I used open coding (i.e., creating lowest-level concepts using words from the texts as well as my own) and axial coding (i.e., comparing codes and relating codes to each other in order to group them and/or reach higher-level concepts) (Corbin & Strauss, 2008). The themes/categories that emerged served as the larger context for each individual case and were later compared and contrasted with the themes/categories drawn upon other data.

Approaching individual cases

The data for each case were composed of one pre- and one post-defense interview, one demographic form, and observation notes (the defense committee's questions and other notes). Before conducting a post-defense interview, I listened to the pre-defense interview and reviewed the field notes taken from the participant's defense to have a sense of this participant's preparation and defense experiences. I also wrote interim case summaries by organizing the data for each case under (a) Who is the participant, (b)

Experiencing the defense, (c) Making sense of the experience, and (d) Defense Experience and Researcher identity. I sent the summaries to the participants to seek their feedback before doing further analysis.

A more systematic analysis was conducted after all data had been collected. I approached each individual case by first reviewing the research questions and sorting out the relationship between the research questions and the data (see Table 3.2).

Table 3.2 Data and Research Questions

Data/Research questions	Experience	Making sense of experience	Researcher identity
University documents	√		
Demographic information	√		√
Pre-/Post-defense interviews	√	√	√
Observation notes	√		√

As mentioned, the major data for each individual case consisted of two interviews, a demographic form, field notes, and questions from the corresponding defense committee. I approached these data differently, and I describe the process respectively below.

Analyzing interviews, demographic forms, and field notes. Conceptual frameworks influence coding (Weston et al., 2001). As this study employed a particular perspective on doctoral candidates' defense experiences (i.e., their researcher identities), I approached each individual case by first creating "pre-defined codes" (Miles & Huberman, 1994) named by the major concepts in the theoretical framework of the study. I made a table listing these concepts/codes and their definitions (see Table 3.3).

Table 3.3 Definitions of Pre-Defined Codes

Membership	• Represented by competence in a community of practice, which is further represented by *knowing*. In terms of researcher identities, membership is coded where a candidate demonstrates knowledge about dissertation research, for example, knowing about the research area (other relevant work, the literature) and knowing the rules, cultures, and values of the community of researchers in his/her area (e.g., epistemology, ontology, methodologies). • Doctoral candidates belong to multiple communities and thus have multiple memberships/identities. Memberships/identities other than researchers are coded when they contribute to researcher identity development (e.g., selection of dissertation topic) or answering questions in the defense. • This is an overarching category, and is related to *trajectory*, *thinking about oneself as a researcher*, *being thought of as a researcher*, and *performing a researcher self*
Meaning	• What defending one's dissertation means to doctoral candidates, for example, what the oral defense examines, what it is for, what the committee is looking for, why certain questions are asked. • Meaning of defending one's dissertation cannot be separated from meaning of doctoral research practice and being a doctoral researcher. Therefore, segments regarding doctoral candidates' conceptions about doctoral research, being doctoral researchers are also coded under meaning.
Trajectory	• This is the temporal dimension of identity construction. It is represented by each doctoral candidate's past, present, and future in terms of their development as a researcher. • It involves activities and reflections regarding the dissertation research process and one's growth as a researcher, including challenges, learning, and gradual self-identification as a researcher.
Thinking about oneself as a researcher	• Candidates' own conceptions about themselves as researchers that have been developed in and through doctoral studies • Connected with *membership, trajectory*
Performing a researcher self	• Broadly this refers to how a doctoral candidate acts as a researcher by participating in research practice in the doctoral process. Coding focuses on how a candidate performs a researcher self in answering the committee's questions in the dissertation defense. • Connected with *membership*
Being thought of as a researcher	• Others' recognition of a doctoral candidate's research competence or status as a researcher before, during, and after the defense (outcome). • While passing the evaluation of the dissertation and the defense are representations of this recognition, it is coded when doctoral candidates *explicitly* refer to recognition of others (defense committee, advisory committee, other academics, etc.) regarding the quality of the research, quality of the dissertation, and performance in the defense.

I then read through the data and created "emergent codes" (Miles & Huberman, 1994). In this process, lowest-level codes (often named by using words and phrases from the original texts) were added under the pre-defined ones, and by going back and forth between the codes and data, the definitions of the pre-defined codes were refined. I used open coding to generate codes at the lowest level (Neuman, 2007) and the constant comparative method (Corbin & Strauss, 2008; Glaser & Strauss, 1967) or "pattern coding" (Miles & Huberman, 1994) to cluster codes. I wrote analytic memos—memos of "thoughts and ideas about the coding process" (Neuman, 2007, p. 334)—using the "code memo" function of MaxQDA to keep track of my analysis.

Analyzing questions from the committees. I observed all 11 defenses and wrote down the questions asked by each defense committee. These questions were analyzed by using a framework proposed by Trafford and Leshem in the U.K. Drawing on their research on the British doctoral viva (mainly Trafford, 2003; Trafford & Leshem, 2002b, 2008), Trafford and Leshem suggested that examiners' questions can be divided into four categories based on two criteria: (a) *innovation and development in research* and (b) *scholarship and interpretation*. The first category is "technology of the thesis," which covers questions regarding the structure, presentation, and content of the *written* dissertation. This category is low in innovation and development and low in scholarship and interpretation. The second group deals with the "theoretical perspectives" of the research and consists of mostly literature-based questions. These questions are for the doctoral candidate to "demonstrate understanding of the academic content in which the research is located and on which it depends for its conceptual insights and frameworks" (Trafford & Leshem, 2008, p.19). This group is low in innovation and development but high in scholarship and interpretation. The third group deals with "practice of research"

and includes questions about emergence and use of research questions, choice of topic, access to field and data. Questions in this category require the candidate to "demonstrate understanding of research as a process and an ability to undertake complex research in a critical and appropriate manner" (Trafford & Leshem, 2008, p.19). This group is high in innovation and development but low in scholarship and interpretation. The last group, high in both criteria,

> deals with *demonstrating doctorateness* such as establishing conceptual links between findings, synthesising evidence into conceptual conclusions, critiquing the research process, advancing contributions to knowledge and defending doctorateness in the thesis and throughout the viva itself. These features are the critical prerequisites of scholarly merit in doctoral level research. (Trafford & Leshem, 2008, p.19, emphasis added)

In order to ensure an accurate understanding of this framework, I first categorized the 12 sets of questions in the authors' 2008 book that correspond to what they called the "12 components of doctorateness[17]" (see Trafford & Leshem, 2008, p. 38). I also contacted one of the authors by email (but was not able to reach him) and talked with one of his research assistants at a conference. I then analyzed the questions from three defenses in the research and compared my coding with that of my supervisor. We discussed our categorizations until we reached an agreement. In applying this framework to the analysis of the questions from the 11 committees, I found that eight questions, most

[17] As mentioned on page 16 of this dissertation, the 12 components are: stated gap in knowledge, explicit research questions, conceptual framework, explicit research design, appropriate methodology, 'correct' data collection, clear and precise presentation, engagement with theory, coherent argument, research questions answered, conceptual conclusions, and contribution to knowledge.

of which were not directly related to the dissertation research, did not fit in any of the four categories. Three questions were about the candidate's post-doctorate or career planning, four random questions about the dissertation topics, and one factual yes/no question. So *Category Other* was created to include these questions.

In the analysis, I needed to determine whether a follow-up question was counted as a part of the previous question or an independent question, since this would affect my counting of the total number of questions in each defense and the numbers of questions in the five categories. The decision was made by a careful examination of the relationship between the major question and its follow-up questions. That is, if the major question and the follow-up questions asked about closely related issues and all belonged to the same category, they were counted as one question; otherwise, they were counted as different questions. For example, in Heather[18]'s defense, the first committee member asked a set of questions regarding the language used in the questionnaire in her research. He first asked Heather to justify her choice of one of two languages spoken in the city where the research was conducted. He then followed up on Heather's answer and explored why Heather changed some formal words into informal ones in translating the questionnaire. Finally, he asked which language was used by the research assistants when they were helping with the research in the field. These three questions were all about the same issue—the language of the questionnaire—and they were all about the *practice of the research*. Therefore, they were counted as one question instead of three. In Laura's defense, however, although the first two questions from the external examiner (asked by the supervisor) were related—as indicated by "based on what you have said" articulated by the questioner—and were categorized in the same question group, they dealt with

[18] All personal names are pseudonyms.

different issues. The first asked Laura to speculate whereas the second was about the contributions of her research. Therefore, they were counted as two questions.

Cross-case analysis

As the cases were used as instruments to understand the phenomenon of doctoral students' experiences of defending their dissertations, cross-case analysis was a necessary step in the research. I first conducted "case-oriented" coding by comparing the cases with one another to see whether they could be grouped, and I then conducted "variable-oriented" coding by comparing and contrasting the themes identified in individual cases to find cross-case themes (Miles & Huberman, 1994). The 11 cases were clustered into six groups according to my interpretation of their research experiences and self-identifications as researchers; that is, how much research experiences that they reported and thought they had, to what extent they identified themselves as researchers. In doing "variable-oriented" analysis, I considered the research questions, the identity framework (presented in Chapter 2) and the codes and code clusters for each case. I looked for commonalities and differences regarding the participants' preparation and defense experiences, their understandings about the defense, and accounts about their researcher identities. I used MS-EXCEL tables to organize findings across the cases (see *data displays* in Miles & Huberman, 1994). Six cross-case themes emerged from this analysis, with the first three related to the first research question and the remaining three related to the other two questions.

3.8 Ensuring Trustworthiness[19]

Ensuring *trustworthiness* (Guba, 1981; Lincoln, 1995; Lincoln & Guba, 1985) was built into the process of this research in that the research design allowed for answering the research questions, the sample was appropriate, data collection and analysis were done concurrently at the early stage, and conclusions were drawn by checking the data constantly (Morse, Barrett, Mayan, Olson, & Spiers, 2002). In addition, several strategies were used to enhance trustworthiness: (a) prolonged engagement at the research site, (b) methods/data triangulation, (c) member checks, (d) "thick description" of the research process and individual cases, (e) reflective journaling, and (f) peer debriefing (Geertz, 1973; Guba, 1981; Lincoln, 1995; Miles & Huberman, 1994; Morse et al., 2002; Shenton, 2004, p. 67).

First of all, in addition to the 11 defenses included in this research, I attended over 20 other defenses in the faculty. My prolonged engagement at the research site allowed me to compare and contrast my observations of the defenses. Secondly, I observed all participants' performance in their defenses and interviewed them for their thoughts about their performance. Observations and the field notes helped my preparation for the post-defense interviews. Particularly, I was able to compare my notes about (and impression of) the candidate's general performance (e.g., responding time, facial expression, my personal feelings about their defenses) and the participants' accounts in the post-defense interviews. Thirdly, at the end of the data collection phase, I emailed each participant a case summary based on a preliminary analysis of the case to seek their feedback. Eight

[19] Some researchers (e.g., David Silverman (2006)) promote the use of *validity* and *reliability* in qualitative research, and others (e.g., Clive Seale (1999)) encourage qualitative researchers to consider quantitative standards for good research. In this dissertation, I follow Guba (1981) and Lincoln and Guba (1985) to use *trustworthiness* to emphasize the distinctiveness of the qualitative methodology due to its consideration of the researcher and the researched.

participants replied by providing additional information about their defense and explanations of what they said in the interviews. I then incorporated their feedback into my analysis. Fourthly, I tried to use *thick description* in presenting the research process (in this chapter) and findings regarding individual cases (next chapter) to allow for alternative/multiple interpretations by the reader (Atkinson & Delamont, 2005; Geertz, 1973). Inspired by the idea of *audit trail* (Shenton, 2004), I kept a reflective journal throughout this project recording the decisions made in the field and the consequences as well as insights and ideas regarding the data analysis. It was carefully reviewed in the data analysis and writing phases in order to retrieve the research process. Last, I had regular discussions with my thesis supervisor about the research process, exchanging thoughts and ideas. I also presented my preliminary findings at conferences to seek feedback from other experts.

3.9 Positioning the Researcher

Schostak (2005), in addressing qualitative interviewing, argues that an interview is actually an "inter-view." He wrote,

> the "inter" implies some space between, or some relationship that is taking place between two or more "elements," "particles," or in some way definable entities existing in definable spaces. This inter generates a sense of priorness to relationship, a betweenness which must exist if there are to be relationships. …the "view" suggests that located in some determinate space a "seeing" is taking place, or a scene exists *here and now* that can be *observed* by some witness, or had existed *there and then* (pp. 13-14, emphasis in original).

This perspective brilliantly summarizes the delicate relationship between a qualitative researcher and the research participants. In this research, I played the roles of interviewer, observer, and interpreter. These roles positioned me differently in different phases and had impact on the final product of the research.

As an interviewer, my identity as a doctoral candidate first helped me establish mutual trust with the participants. Further, who they viewed me as, what questions I asked, and what questions I followed up on all contributed to what data were ultimately collected. I co-construct reality with the participants (Gubrium & Holstein, 2002; Mishler, 1986). Viewing me as their junior peer, the participants were willing to share their experiences, especially when they thought this sharing would help *my* preparation for the defense! I do not think what they talked to me about would be the same as if they had talked to a faculty member. In this sense, I was part of the research instrument, along with the interview protocols. In the meanwhile, I acted professionally enough to "gently guid[e]" the conversations (Rubin & Rubin, 2005) and to use my "skills to enable the interviewee to tell stories that would otherwise remain untold" and to discover things that they might not have discovered without an interview (Nunkoosing, 2005, p. 702). Both my personal identity as a junior doctoral candidate and my professionalism as a researcher ensured a robust data collection process.

I was a non-participating observer at all defenses. I decided not to ask any questions because I understood their anxiety at the defense. I also provided each participant a "tip-sheet" to help their preparation because I sympathized with them and wanted to help.

Finally, as an interpreter, I was fully aware of and frequently reflected on how my own identity and perspectives influenced my interpretation of the data. Savin-Baden

(2004) distinguishes *reflexive interpretation* from *data analysis,* and argues that the touchstone for the shift from *analysis* to *interpretation* is the researcher's situating of him/herself in relation to the data (Savin-Baden, 2004). Elliott (2005) reminds researchers that being reflexive "does not simply mean providing the reader with personal data about the researcher, but rather providing an analytic account of how the researcher's personal and academic history, together with theoretical perspective, lead him or her to approach the evidence in a particular way" (p.158). In this dissertation, I have a section in Chapter 1 about why I chose the present topic and the particular theoretical perspective; just above I described how my identity might have impacted on the data collection. In the postscript, I will discuss how my identity and perspectives influenced my interpretation of the data and in what way conducting this research has impacted on my own identity as a researcher.

CHAPTER 4: INTRODUCING THE CASES

> *In the viva…[y]ou have to make adjustments and, in a sense, follow someone else's route through your material. This is a salutary lesson: it helps you to move beyond the - at earlier stages essential - narrow focus and drive towards closure in your doctorate, and forces you to mediate your message. You have learned, or at least begun to learn, the crucial professional skill of dialogue. (Murray, 2003a, p. 148)*

This research aims to explore doctoral candidates' defense experiences from a new perspective, doctoral candidates' researcher identities. This chapter presents case-specific findings in order to capture the variety of the participants' experiences. I begin the chapter with the institutional policies on the evaluation of the doctoral dissertation and the oral defense, followed by an overview of the cases. I then present the cases by six groups categorized according to my interpretation as to the participants' prior research experiences and their self-identifications as researchers. Each individual case is presented as a narrative starting from the participant's background through his/her preparation for the defense to observed defense experience and his/her reflections on this performance. For each case, my particular focus is on how the candidate performed researcher selves in the dissertation defense.

4.1 The Institutional Policy on Evaluation of the Dissertation and Oral Defense

At the university where this research was conducted, a doctoral candidate cannot proceed to the oral defense unless the written dissertation has been passed by both the internal and external examiners. According to the institutional guidelines, a "pass" is

awarded to a doctoral dissertation when it demonstrates (a) original scholarship and distinct contribution to knowledge, (b) familiarity with the literature in the field, (c) ability to conduct research, (d) current disciplinary standards, and (e) when it is "written in compliance with norms for academic and scholarly expression and for publication in the public domain." When a dissertation meets these criteria, it is given a "pass" even though "stylistic or editorial changes" may be suggested. When major revisions are required, such as conducting a new study/experimentation, or "the quality of the presentation is poor and extensive rewriting is required," a dissertation is considered a "fail." Of the 11 participants in this research, two had their first dissertation failed and thus submitted a second, extensively revised dissertation; and their defenses were based on the submission of the second dissertation.

Examiners are nominated when a doctoral candidate makes the initial submission of the dissertation to the Graduate Studies Office. The candidate submits one name for the internal examiner and three names for the external examiners[20] (from which the Graduate Studies Office will randomly pick one). The internal examiner is usually a faculty member from the candidate's department[21], who "may or may not know the candidate or the work prior to examining the thesis." The external examiner (a) must come from outside of the university, (b) must be an established scholar in the field of the dissertation research, and (c) must not be in "conflict of interest with the candidate or supervisor(s)[22]."

[20] This was the case at the time of the data collection. The policy has changed since 2011 to only nominating one external examiner.

[21] The internal examiner could be the supervisor before the university changed its policy in 2011. In some cases, he/she may come from another department.

[22] The guidelines define "conflict of interest" as the following: anyone involved in some other way with the student's research – who … collaborates with the student as co-researcher on a project, or is a co-author with the student on an article connected with the student's research (but not included in the dissertation); has evaluated the candidate's thesis research previously (as an advisor or evaluator for progress tracking), or collaborates with the student's supervisor(s) on projects connected to the student's research and to which

Generally speaking, both internal and external examiners have expertise in the field of the dissertation research. In this research, the participants were divided in terms of the way of selecting examiners. Five participants[23] (Bonnie, Laura, Martin, Max, Patrick) selected the examiners with consulting their supervisors, and another four (Maria, Helen, Karen, Larry) nominated the external examiner relatively independently, including one (Larry) who selected all committee members largely by himself.

When the internal and external examiners return their evaluations of the dissertation to the university, they provide an overall grade (i.e., pass or fail), comments explaining the evaluation, and a list of questions to be asked at the defense. At the university in the research, the internal examiner must attend the defense whereas the external examiner is often absent and has her/his questions asked by the supervisor. In this research, all external examiners' questions were asked by the supervisors.

The oral defense committee is composed of 6-8 members in total. In this research, 10 committees had 6 members and one committee had 7 members. My observations of other defenses in the faculty seemed to indicate that usually the defense committee was composed of 6 members and few committees would be as large as 8 members. In addition to the internal examiner of the dissertation and the supervisor(s), also on the committee are the chair of the defense (a faculty member from outside of the candidate's department

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the student has contributed in some way; (b) anyone who has recently (within last five years) co-authored or otherwise carried out research collaboration with the supervisor or the student; (c) in the case of a thesis that consists of a collection of papers, a co-author of any component of such a thesis; (d) recent former students of the supervisor (i.e., those who have graduated within the last five years); (e) a graduate of the same academic program as the student within the last five years; (f) The supervisor's former supervisor (for five years after graduation); (g) anyone who has expressed an interest in having the candidate as an employee, student or postdoctoral researcher (or equivalent) or who is in a department/school where the student has an academic appointment (or an offer of one); and (h) any person with a personal or financial relationship to the student or the supervisor; (i) an academic staff member who left [the university] within the last five years (applies to doctoral thesis examiners only).

[23] This question was not part of the interview protocol for Hank and Heather because in both cases the participants had a limited time for interviewing and I was not able to ask all questions.

yet within the university), external members (faculty members from outside of the candidate's department but within the university), and other members (from the candidate's department, often 1-2 members on the candidate's advisory committee). In a word, the defense committee is composed of scholars within the candidate's research area and those outside of it.

4.2 An Overview of the Cases

This section serves as a brief cross-case summary of the participants' demographic backgrounds, their preparation strategies, and the conduct of the 11 defenses.

Demographics

The 11 participants, six women and five men, from three departments in the Faculty of Education of a Canadian English research-intensive university, represented a degree of diversity of doctoral students (see Table 4.1). Their age range, four over 45 and seven in their 30s, was largely consistent with that of the literature, which reports that doctoral students in education are usually older than their counterparts in other fields (Nettles & Millett, 2006). While the majority (7) spoke English as their mother tongue, two participants' mother tongue was French, and the remaining two were landed immigrants in Canada who spoke English as a foreign language. The degree completion times (5 years on average) were slightly shorter than what has been reported in the literature, with a range of 3.5-8.5 years. The participants also varied in the number of publications and presentations, which reflects the differences in their research experiences. In particular, Larry had 78 publications whereas Patrick only had one; Martin did not have relevant publications in education yet had publications in a different

field. A noticeable fact is that the participants were in varied career paths, and a number were already in the academy. There was one tenured faculty member (Martin), one pre-tenure faculty member (Helen), one experienced faculty lecturer (Bonnie), and two new part-time faculty lecturers (Larry and Maria). Amongst the others, one was an experienced elementary-secondary teacher-administrator (Max), one was a full-time clinician (Laura), and one was a full-time researcher (Hank). The remaining three (Karen, Patrick, Heather) were in the middle of deciding on careers.

The 11 participants came into the PhD programs mainly for three reasons: to increase their knowledge in their field of study (8 participants), to enter into or advance in their field (7 participants), and to pursue personal intellectual interests (6 participants). In particular, four (Larry, Bonnie, Martin, and Max) selected their dissertation topics based on their present work/research experiences.

Preparation strategies

The participants reported a range of strategies for preparing for the defense (see Table 4.2), with the most common ones being attending others' defenses and having dry-runs. Nine participants attended at least one defense; Bonnie attended eight and Karen attended over 10. Hank and Maria were not able to attend any defense because Hank had been working in another country and Maria had been living in another city since her third year in the program. All but Larry and Max had at least one dry-run; some only with their supervisor and others with the supervisor and others (e.g., other professors and other students). Heather had two (one with her supervisor and the other with her lab mates) because of a schedule conflict. This was in contrast with student experiences in the U.K., where only slightly over one tenth had a dry-run (Tinkler & Jackson, 2002).

Table 4.1 Demographics of the Participants

Name	Sex	Age	Mother tongue	Dept	Area of study	Time to completion	Participation in research		Job position held immediately after PhD (as known)
							Publications	Presentations	
Larry	M	26-30	French	C	Bibliometrics	3.5	78 (33 P)	32 (17 P)	Post-doctoral fellow
Hank	M	31-35	English	A	Education & International Development	4.0	6 (3 P)	7 (6 P)	Researcher at a Research Institute (Started during PhD)
Bonnie	F	>45	English, French	A	Second Language	6.5	2 (0 P*)	6 (2 P)	Full-time faculty at research-intensive university (held before PhD)
Martin	M	>45	English	B	Applied Cognitive Science	N/A	Numerous Case Studies Publications in management	N/A	Full-time faculty in the School of Business at a research-intensive university (held before PhD)
Max	M	>45	English	A	Educational Administration	3.5	N/A	5 (0 P)	Full-time administrator at elementary or secondary level (Held before PhD)
Heather	F	31-35	Neither English nor French	B	Child Psychology	8.5	2 (2 P)	4 (4 P)	Part-time researcher in the private sector
Laura	F	31-35	French	B	School/Applied Child Psychology	5.0	4 (2 P)	3 (3 P)	Full-time professional/clinician
Maria	F	31-35	English	B	School/Applied Child Psychology	5.0	4 (1 P)	N/A	Part-time faculty at college /comprehensive university Part-time clinician in Hospital
Helen	F	>50	English	A	Educational Leadership	5.5	7 (7 P)	7 (7 P)	Full-time faculty at college/comprehensive university (Started 1.5 years before defense)
Karen	F	31-35	English	A	Science Education	6.0	6 (3 P)	10 (5 P)	Post-doctoral fellow
Patrick	M	36-40	Neither English nor French	A	Applied Linguistics	4.0	1 (1P)	2 (2 P)	Searching for jobs

*P = Peer-reviewed

Eight participants checked the university guidelines, yet half of them indicated that the information in the guidelines was not as helpful. Particularly, Hank mentioned that some other universities' websites contained "*tips for surviving your defense*" whereas the university in the research did not. My own reading of the guidelines on the university website revealed that the guidelines contain basic suggestions for preparation for the presentation and questioning sessions. For instance, the presentation "*should be structured as for a presentation at an international conference,*" and "*should deal especially with the contribution to knowledge*"; "*the questions and comments will be based mainly on the thesis and presentation, but the student's grasp of related subjects may also be tested*"; and "*the student should have a copy of the thesis at hand, as he/she may be questioned on specific points. Answers to questions should be concise, unless there is a request to elaborate*." However, the *expectations* for the candidate's performance do not seem explicit, other than that their answers to the questions "*should be concise.*"

Six participants mentioned reading the dissertation as a preparation strategy, and they read the dissertation for various purposes. Hank wanted to "*look at it critically from somebody else's perspective*" thinking "*where I have been clear, where I haven't been clear."* Laura "*paid less attention to the literature review…but when it came to…my statistics and data analysis, I took shorthand notes of everything*." Both Karen and Heather re-read their dissertations "*looking for … questions … that people might be able to ask me and trying to answer them ahead of time*" (Karen, pre-defense interview).

Three participants (Hank, Martin, Max) also searched the internet for information, a strategy never mentioned in the literature. Max even looked for video clips of oral

defenses. Consulting how-to guides was only mentioned by one participant (Hank), which was a surprise given the large number of how-to guides available in North America.

In preparing for the defense, the participants interacted with various people. As expected, supervisor was the No. 1 source of information for 10 of the 11 participants. Patrick did not consult his supervisor because she happened to be away in another country. The participants asked their supervisors for general information about the defense, sought feedback on their presentations, and in some cases, anticipated questions together. Six participants also received feedback from their fellow students, particularly at the dry-run. Besides, four participants also talked with their friends, mostly recent doctoral graduates, and asked them to share their defense experiences. Three participants who had full-time jobs consulted their colleagues for information and/or feedback. Finally, two participants (Bonnie and Martin) had another professor at their dry-runs and another participant (Karen) invited her advisory committee to attend her dry-run.

A notable fact is that a few participants used many more strategies and resources than other participants, which revealed, to a certain extent, their views about the significance of the defense to them. Typically, Patrick consulted all information sources available. He attended several defenses in his department, had a dry-run with a faculty member and a few students, talked to friends who had defended, attended a workshop organized by the graduate studies of the university, read his dissertation once every day during the week prior to the defense, and "*practiced more than 30 times in front of friends and … family*." Similarly, Laura had a dry-run with her supervisor and lab mates, talked to people who had defended, presented to her boyfriend, and printed "*bigger-picture articles*" a few days before the defense. In contrast, Larry did not seem to take the

preparation as seriously since he only reported attending two colleagues' defenses a long time ago.

Table 4.2 Preparation Strategies Named by the Participants

Preparation Strategies	No. of Cases	Details
Attending other defenses	9	Bonnie attended 8 Karen attended over 10 Hank and Maria attended 0
Having a dry-run	9	Heather had 2 Larry and Max had 0
Checking university website	8	Bonnie, Hank, Helen, Laura, Maria, Martin, Max, and Patrick all checked the online guidelines Heather, Karen, and Larry did not check guidelines
Re-reading dissertation	6	Hank, Heather, Karen, Laura, Max, and Patrick all mentioned this as a strategy Patrick read his dissertation over 4 times
Searching Internet	3	Hank, Martin, and Max
Other Strategies	5	
Checking how-to guides		Hank
Attending how-to workshop		Patrick
Reading research methods books		Patrick
Reading literature about oral defenses		Larry
Presenting research at conferences		Larry
Downloading "bigger-picture" articles		Laura
Reading relevant dissertations early in the program		Max
Visiting the room		Max, Laura
People Interacted With		
Supervisor	10	Except Patrick
Fellow students at dry-run	6	Bonnie, Heather, Laura, Maria, Martin, Patrick
Friends/Doctoral graduates	4	Heather, Karen, Laura, Larry
Work colleagues	3	Bonnie, Martin, Max
Other professors	3	Bonnie, Martin, Karen

Variations in conduct

The 11 presentations were similar in that all candidates adopted a presenting structure beginning with the research questions and ending with conclusions and implications. Except one candidate (Bonnie), who presented for 32 minutes, all other candidates presented for 20 minutes or so. Other observed variations were minor; for example, Heather began her talk with the contributions of the research, Bonnie and Helen

used images to communicate the conceptual framework of their dissertations, and Helen and Karen read from a script in presenting the research.

Variations mainly occurred in the questioning session. First of all, the 11 defenses were significantly different in the number of questions from the evaluation committee. As Table 4.3 shows, the questions ranged from 14 to 29 in each defense. It seems that the candidates from Department B tended to receive more questions than those from Department A. Also, the length of the questioning session did not necessarily correspond with the number of questions received. For example, Helen received 17 questions in 79 minutes whereas Heather received 28 in about the same time; similarly, Hank received 16 questions in 70 minutes whereas Larry received 27; in an even shorter time, Maria received 29 questions and Laura 24. Also, some participants received questions from the audience whereas others did not. Larry had the largest audience of the 11 defenses and he received the most questions from the audience.

Table 4.3 Variations in Conduct of the 11 Defenses

Case	**Dept**	**Public session (mins)**	**Presentation (mins)**	**Questioning (mins)**	**Qs from committee**	**Qs from audience (No. of audience)**
Larry	C	93	23	70	27	**5 (22)**
Hank	A	90	20	70	16	2 (5)
Bonnie	A	90	**32**	58	14	1 (14)
Martin	B	89	23	66	21	0 (6)
Max	A	88	25	63	20	2 (6)
Heather	B	100	20	80	28	0 (2)
Laura	B	86	20	66	24	0 (5)
Maria	B	89	22	67	29	0 (6)
Helen	A	99	20	79	17	0 (13)
Karen	A	76	21	55	16	0 (15)
Patrick	A	72	17	55	17	2 (10)

While the majority of the participants did not report impact of the number of questions on their performance, Heather said, *"I felt tired half way through…because there were so many questions and so much repetition."* She also blamed exhaustion as a reason for her

not being able to answer a challenging question: "*I don't think I answered [it] very well because … I was exhausted. … I haven't attended … many [defenses] but I don't think that there are generally nearly 30 questions*."

4.3 Performing Researchers in the Dissertation Defense

This section presents how the 11 participants performed in the questioning session of the dissertation defense. In accordance with the candidates' reported prior research experiences, their self-identifications as researchers and their defense experiences, I divided them into six groups. *Very much researchers* had more research experiences, felt very comfortable calling themselves researchers, and did not expect the defense to confirm their researcher identities. *Teachers-researchers* and *clinicians-researchers* were both practitioner groups. Compared to the first group, they had more teaching/clinical experiences and were learning to do research; they began to feel like researchers and expected the defense to confirm their research competence to a large extent. Helen was a *researcher between communities* in that her dissertation was written in a discipline different from education. She was a unique case in many senses. She had less research experience compared to the first group but held a pre-tenure position. She expected the defense to confirm her scholarship to some extent because of the failure of her first dissertation. The *disappointed researcher,* Karen, also had her first dissertation failed by the external examiner. She had some research experience but was not confident about her research skills. She expected to be challenged in the defense but was disappointed by the lack of challenge. Finally, the *student-researcher,* Patrick, had some research experience, was becoming more independent as a researcher, and expected the defense to confirm his researcher identity.

In the following, I present each case in chronological order (i.e., from preparation experience to the post-defense reflection). As for the part regarding the participant's defense experience, I focus on how he/she handled questions, especially those that he/she named as difficult/challenging. Common among the participants' defense experiences (except in Karen's case) is how they tried to *balance knowing and not-knowing* in answering questions. That is, they tried to demonstrate their knowing by providing answers based on both their understanding of the dissertation research and knowledge from other sources (e.g., anecdotal evidence, teaching experiences), and negotiated not-knowing by providing hedged/provisional answers, occasionally acknowledging weaknesses and limitations of the research or saying "I don't know." It was through balancing knowing and not-knowing, in various ways, that the participants performed researchers "defending" their dissertations.

"Very Much" Researchers

Larry and Hank, from two different departments, had different backgrounds and interpreted their defenses in different ways. Larry had more research experience and many more publications and presentations. However, both identified themselves as researchers prior to, during and after the defense, and both had a strong sense of belonging to a community of researchers. Larry had been invited to many conferences and universities and had been publishing extensively in his field. Hank was hired as a "research officer" in a research institute and had been working with researchers from all over the world. Both Larry and Hank were conducting research other than their doctoral project during their doctoral studies and both would continue doing research after getting their PhDs.

Larry

Larry was a 30-year-old PhD candidate who identified himself before the defense as "*99% researcher*." He explained that a PhD degree was the 1% that made his researcher identity complete. Larry had been involved in research since undergraduate years and had over 70 publications (33 peer-reviewed) and over 30 conference presentations (including several invited speeches). Larry saw himself as an expert in a particular research method, which was used in his dissertation research as well as in other work of his. Besides 11 years of research experience, Larry had worked as a part-time lecturer in several universities. Larry had two supervisors and the principal supervisor's research areas were only "*remotely related to*" his own. As a result, Larry was very independent in his study. For example, he solved a difficulty in his research design all by himself and managed to access a major database through a long time negotiation with the people in charge. At the time of the defense, Larry had won a post-doctoral fellowship from the Social Sciences and Humanities Research Council (SSHRC) of Canada and was looking for an academic position. He was preparing for a job interview for a tenure-track position while preparing for his defense.

Due to the nature of his dissertation research (also in doctoral education), Larry had read some literature about doctoral oral defenses. He attended a few defenses of the doctoral students that he had been working with at another university and talked to these students about their experiences. He had presented his dissertation work several times at international conferences. As a result, Larry felt confident and ready before the defense. Larry did not have a dry run although he did send his presentation slides to his principal supervisor for feedback. He anticipated that the challenging questions would be about his data analysis and specific details in the dissertation.

As Larry's principal supervisor was not an expert in his research area, Larry played a major role in suggesting names for his defense committee. Due to a bureaucratic mistake, Larry and his supervisor had to find an additional external member "*at the last minute*."

Larry's defense was held in the conference room of his department in the afternoon. The room was re-arranged for the defense so that the seats for the committee members were placed in the front and the seats for the audience were placed behind or along both sides of the room. When the public session began, Larry was standing behind the podium in the front of the room. Next to him was a standing board with large blank sheets attached to it. Larry's defense committee was composed of seven people including the Chair of the committee and two supervisors. There were 22 people in the audience and the coordinator of the department had to add extra chairs. Among the audience were Larry's father, his friends (doctoral students, doctoral graduates, academics and the colleagues that that he had been working with) and other doctoral students from Larry's department. Ten minutes prior to the defense, the coordinator of Larry's department brought water to every committee member and distributed pamphlets to the audience. Each pamphlet had the title and abstract of Larry's dissertation, the names of all committee members, as well as Larry's educational background and awards.

Larry gave a 23-minute presentation using PowerPoint, going from his research questions to implications, limitations, and future research. He then received 27 questions in two rounds in the following 70 minutes, including one question from the Chair. The audience asked five questions before the Chair posed his. Larry was announced Doctor X and congratulated after a short meeting of the committee. Then the program coordinator of the department re-arranged the room again and brought in wine and snacks.

According to the framework for categorizing questions (see Chapter 3), of the 27 questions in Larry's defense, four fell in Category B (*theoretical perspectives),* 14 in Category C (*practice of research),* and nine in Category D (*demonstrating doctorateness).* Larry named five difficult/challenging questions (one B question, and four C questions), and all came from the external member added to his committee due to the bureaucratic mistake. Larry felt it was difficult to answer these questions mainly because the questioner, who was from a different field of research, was looking at his research from a different perspective. After the defense, Larry commented on the divergence between him and this committee member:

> *He [the external member] says, "No, you can't analyze [it] this way." [But] that's OUR way. It should be analyzed from MY point of view. So he asked me questions about the design, validity and context. In his way of seeing things gender is a context. MY way, gender is not a context…you were born as a man or woman. …. So it's all a matter of paradigms and of having different manners of conducting research. So I think that's why he asked me these questions—because from HIS point of view some of the methods I have used are not good or not as good as the one [he] would have used. (Larry, post-defense interview)*

The underlined parts highlighted the differences between two fields. In describing the feelings when thinking of answering these questions, Larry said that it felt like "a fight in *his* turf" "using *his* arms." When the same member asked questions based on his own interpretation of Larry's work, Larry interrupted him to defend what he really meant:

> *[He was saying like] "You are saying this and then you are saying that" ….If I say yes to all the things he said then I am in a bad situation. So it was quite tough for me to listen to him and to try to answer him. So I interrupted him a few times trying to answer to what he was saying … because he was trying to put words into my mouth. (Larry, post-defense interview)*

At the same time, Larry "*tried to [give] answers that … either satisfied him or at least prevented him from asking more questions,"* which was not successful. Eventually, these questions shaped Larry's feelings about his defense experience, which he described as "*painful*."

After the defense, Larry was suggested to "tone down" some statements in his dissertation as well as to correct a few typos. Although Larry indicated that he would follow these suggestions, he was not convinced that toning down some statements was necessary:

> *It seems to me that don't try to say too much [in your thesis]. …. If you are making strong statements you are putting more chances that you will be attacked and you will be challenged on those statements. On the other hand if you say basically nothing—you say "I think it works like this but it is very complicated and further research is needed" everybody will be happy … .and everybody will say "OK, yeah." When you try to analyze and to understand and to suggest things, you will be challenged. That's stupid advice. I would not say that it is advice because I think that a good thesis should make at least a few strong statements. (Larry, post-defense interview)*

Overall, Larry felt he was not treated as a "peer" in the defense:

> *I thought I could go to the defense as a peer, as an established researcher. And obviously that was not the case in the sense that in the eyes of some of the members of the committee, I was still a student, which of course I was still. But the way I represent myself is as a researcher because that's basically what I have been doing for a number of years. (Larry, post-defense interview)*

Hank

Hank, in his early 30s, was a research officer in a European research institute. He took up this position a year before finishing his dissertation and had been working with other PhDs in his daily work. Before taking up this position, he had worked in several other positions in Canada and abroad. Hank had known his supervisor for 8-9 years and maintained a very close relationship with his advisory committee—so close that he "*could make fun of them*." As a result, Hank felt like he was a peer of his committee throughout his PhD study although he knew there were differences between them. Hank thought about himself as "*very much a researcher*" before the defense. Yet he had concerns about being recognized as such, or what he called the "*imposter syndrome*." He had four publications (one peer-reviewed) and seven presentations (six peer-reviewed), and wanted to pursue an academic career in the future.

Hank's preparation for the defense was more thorough than Larry in that he sought information from more sources and people. He checked the websites of the university as well as another university for guidelines and tips and read relevant chapters in some how-to guides that he found in libraries. He also asked his colleagues in the research institute about their defense experiences and learned about the differences

between the system of that country and that of Canada. He made his presentation slides after re-reading his dissertation and then had a mock presentation online with his supervisor. Hank accurately anticipated that the easy questions from his defense committee would be about his field work (i.e., how he conducted his research) and the challenging/difficult questions would be around his theoretical framework and the analysis based on it, for he had struggled with and been challenged about an alternative framework during the research process, and a committee member promoted that framework. To prepare for the questioning session, Hank put post-it notes throughout his dissertation and re-read it "*critically from somebody else's perspective*," the perspectives of his defense committee as well as a general audience.

Hank flew back to Canada three days prior to the scheduled defense date. His defense was held in the morning in the conference room of the faculty. His defense committee was composed of six members including the Chair and his supervisor. There were five people in the audience, with four coming in a few minutes late.

Hank's 20-minute presentation went from his theoretical framework, methodology to research findings, contributions and future studies. He then received 18 questions (including two from the audience) in the following 80 minutes. Of the 16 questions from the committee, four were in Category B (*theoretical perspectives)*, four in Category C (*practice of research)*, and six in Category D (*demonstrating doctorateness)*. The remaining two questions were not directly related to his dissertation and hence were in the *other* category (one was about whether the researcher would present the research to the researched community and the other was about the participant community's reaction to a certain public speech). Hank was relaxed in delivering his well prepared presentation and at the end he said, "*Seven seconds left!*" He felt the questioning session was more

"*stressful*" than the presentation but "*interesting*." Overall, Hank thought his experience was "*quite positive*" and believed he had met the committee's expectations.

Like Larry, Hank also "*felt more or less like … a researcher prior to coming into [the defense]*". He had a strong sense of belonging to the local community of researchers in the institute where he was working and saw himself as a peer of his advisory committee. In spite of this, Hank still had "*this fear that somebody would say 'No, this is actually not real scholarship or this is not nearly sufficient to be a doctoral research.'"* In the questioning session, Hank reported he was constantly evaluating the importance of the questions, justifying the decisions that he had made in the research process, and choosing the way to respond to them:

> *I think when you hear the question, you sort of evaluate what is at stake with this question and you phrase your response. It's not to say that you don't take the question seriously, but I think you choose the way you respond to it accordingly. Some questions… are very easy to answer and I think you can do a lot with it in terms of impressing the people that you are talking with so you can play with that a little bit and so on. Other ones are very delicate and you have to be very strategic in how you answer it. So it's all about this ability to assess what that question means in terms of the group that's evaluating. (Hank, post-defense interview)*

The "ability to assess" questions guided Hank's performance in the questioning session and enabled him to balance knowing and not-knowing. For example, one of the difficult questions was about the meaning of a term within a quote in his dissertation. Although Hank *did not know* the answer and said so to the committee, he *knew* this question was

not important enough to fail him. Therefore he was "*not that stressed out*." Similarly, Hank *knew* that another question, the first of the external examiner (asked by the supervisor), was not about "*a weakness within [his] study that really was going to put the thing at risk.*"

As anticipated, Hank encountered a few challenging questions all involving the alternative theoretical framework noted before. These questions were "*a debate [that he had] had with others along the way and … debate[d] it in [his] own head.*" Hank knew that they were important questions that needed to be addressed well. In answering them, Hank first acknowledged the value of the framework and then tried to justify why he "*chose not to*" use it in his research:

> *that wasn't within the scope of the study that I was doing. I know that for [that member] that is a very important thing [but] for me it was a lower priority given the investigation that I was doing. Now if I had wanted to take an extra six months, and an extra 100 pages, I probably could have worked all that stuff into the analysis and maybe had an even better final product. But I chose not to and therefore you have to justify in a sense limiting yourself to something that doesn't include what they think is important. (Hank, post-defense interview)*

Hank's answers were accepted by the committee, as represented by their praise during and after the defense. After the defense, Hank was going to correct a few typos and to add a section about his "positionality" in the research.

Teachers-Researchers

Bonnie, Martin and Max embarked on the PhD study in the middle of their teaching careers in different contexts. For years, Bonnie had been a teaching lecturer,

Martin had been a faculty member in a non-education field, and Max had been an elementary-secondary school teacher. For Max, he was starting as an administrator as well as a teacher. All three participants' dissertation work was drawn upon their practitioner work. Through the doctoral study, they all learned to become researchers, although their sense of belonging to the community of researchers varied.

Bonnie

Bonnie, in her 50s, was a full-time teaching faculty at a research-intensive university. She had held this position for years before enrolling in the PhD program. Bonnie identified herself more as a teacher educator than a researcher, and she expected to "*better contribute to [her] students and colleagues*" with a doctorate. For Bonnie, "*teaching has always been very important*" whereas doing research meant "*a door is opening*" through which she could "*look at things differently*." Bonnie had two non-peer reviewed publications and six conference presentations (2 peer-reviewed). She planned to write one or two journal articles based on her dissertation after graduation.

Bonnie started attending dissertation defenses as soon as she started her PhD. Before having her own, Bonnie had attended eight defenses: four at the university where she was reading for a PhD and four at the university where she worked. She paid more attention to the "how-to-present" aspects of these defenses. At the same time she tried to categorize the committee's questions and thought about answering them herself.

Bonnie made careful and thorough preparations before having her defense. She first checked the website of the university and then rehearsed her presentation with various audiences—her colleagues, students, and family—in order to receive feedback from various perspectives. She even practiced several times in front of a mirror. Bonnie

flew to the university a few days earlier than the scheduled time to have a mock defense with her supervisor, an invited professor and a couple of graduate students. She then revised her slides according to their feedback.

Bonnie knew all her defense committee members except the external examiner of her dissertation. Based on their backgrounds, Bonnie anticipated that some members who supported her would "*set [her up] to showcase*" her research whereas others might raise questions about the specific teaching method used in her research. Bonnie thought that the questions directly about the research site and population would be easy and "*some esoteric little question*" or "*some specific little detail*" would be difficult. She accurately anticipated that the challenging questions would be about defending the "*qualitativeness*" of her research. Bonnie nominated the external member and selected other defense committee together with her supervisor. The external member that Bonnie nominated asked a few questions regarding her research approach, which Bonnie felt challenging.

Bonnie's defense was held in the conference room of the faculty. The defense committee was composed of six people including the Chair and supervisor. There were 14 people in the audience, including Bonnie's daughter and her husband. Bonnie also invited her "*academic and non-academic*" friends.

Bonnie's presentation took 32 minutes, longer than the institutional guidelines recommend (20 minutes). She began by showing a painting representing the theoretical framework of her research, telling the audience that she would interpret the painting in the end. Bonnie then talked about her research questions, methodology, epistemological framework, findings, limitations, and future research. Bonnie was passionate from the beginning to the end of the presentation, using lots of hand gestures and keeping good eye contact with the audience. After the last slide, Bonnie thanked the audience and forgot to

explain the painting. Bonnie's supervisor reminded her and she then went back to the picture.

Bonnie received 15 questions in the following 58 minutes: 14 from the committee and one from the audience. Of the 14 questions from the committee, two fell in Category B *(theoretical perspectives)*, six in Category C *(practice of research)*, and the remaining six to Category D *(demonstrating doctorateness)*. For Bonnie, some questions were easy because "*in my head I have practiced for them*." The two challenging questions were both from the external member mentioned earlier. One was about "*the rigor of the research*" and the other was about her sampling strategies. Bonnie's supervisor did not ask all questions listed in the external examiner's report. And when Bonnie received the report after the defense, she noticed a "*shocking*" question that she would not have been able to provide an answer for if it had been asked.

Bonnie was "*just beginning to think of [her]self as a researcher*" before the defense. In preparing for it, for example, she felt like "*taking on the role*" of a researcher and this role was becoming "*a part of me*". Bonnie was

> *experiencing very much a shift in the way I perceive myself. Absolutely! And I am finding more of a comfort level with it. Because when I was writing the dissertation, my colleagues would talk to me as though I were already a part of academe. They would say, "Oh, Bonnie, you are doing what? What are you drawing from? Your epistemology is what?"And then I would say, "[It's] XXX. And they [would say], "Oh yes" and they would talk about the ideas. But I would just think I am just playing with these words. It's not real yet. And now it's becoming real. (Bonnie, pre-defense interview)*

In the meanwhile, Bonnie felt strongly that she was "*go[ing] back and forth between I am a teacher educator and I am interested in research*" (pre-defense interview). This between-ness was reflected in how she made sense of being a researcher:

> *[Doing research] is a way for me to understand things. [And] in sharing that [understanding] it's also a way to perhaps effect change, not so much for me but perhaps for the student teachers that I worked with in that area. (Bonnie, pre-defense interview)*

For Bonnie, her dissertation defense was a confirmation of her researcher identity because by going through it she "*realized I did conduct the study [and] I do understand my methodology*."

In answering the challenging questions, Bonnie was trying to convince the external member, who preferred a quantitative methodology, that the qualitative methodology was valid.

> *She wanted to know what I had measured against, what I was counting, … and how I could come up with my results. And I just looked at her and thought, "Ah, you are totally from a positive paradigm; you are totally scientific." …So she can't accept this. It doesn't matter what I say. I thought, "Well, I can use the words that are used in quantitative. I can show her that I know what she is saying. But I am trying to tell her you cannot compare apples with oranges in the end" (Bonnie, post-defense interview).*

Bonnie felt that her answers were not accepted by this member. However, after the defense, Bonnie's supervisor and another member of the committee praised her for handling the questions professionally.

Bonnie tried to balance her knowing and not-knowing in addressing difficult/challenging questions. When an examiner asked Bonnie to elaborate on a citation that Bonnie did not know much about, she was able to provide a general answer because she "*had done readings*" and had talked to one of the authors of the paper at a conference. At another question, while admitting what was being asked was a limitation of the research, Bonnie made it clear that she "*did [her] homework*."

> *I gave them a general [answer], I admit it, yes. I used the word "imposter." In some ways I AM an imposter because I am not connected to aboriginal people. But I did my homework. I checked into where these materials came from, who made them, how they were made, how to use them, and these kits were created by aboriginals for use in the regular mainstream classroom. So I read the whole thing through. I checked because, as I explained in my answer, I have colleagues. I have three colleagues … who are aboriginal and I spoke to them about it. So that was in my answer. (Bonnie, post-defense interview)*

Overall, Bonnie felt "*more at ease*" than she had expected and thought "*everything was fair*." After the defense, Bonnie was suggested to make minor revisions to the dissertation including correcting a few typos, adding a percentage, page numbers and a footnote.

Martin

Martin, in his late 40s, was a full-time faculty member in a non-education field at a research-intensive university. He had over 10 years of teaching experience in the field, had taught numerous courses in different universities, and was winner of several teaching awards. Before joining the academy, Martin worked in industry for over 10 years. Even in the academy, he maintained connections with industry by doing consultancy. Martin identified himself as "*50% researcher*" because he had not conducted research "*for a while.*" Martin thought of himself as "*not a pure researcher mainly because I started off as a non-researcher and it's only with this PhD that I'm learning how to become a researcher*." Martin hoped to become better at doing research in the future, yet he felt that doing research was "*not something that really motivates me that much*." Like Bonnie, Martin's dissertation research was also closely related to his job. Once he started his doctoral study, he had been looking for a topic to "*not only satisfy the academic aspect but actually be practical for myself.*" When "*nobody [on his advisory committee] really knows the whole landscape*" of his topic, he managed to "*come up with [his] own [framework]*" through reading.

Prior to his defense, Martin had attended several defenses at the university where he worked. A day before his defense, Martin attended one more defense in the faculty of education at the university in the research. Before that, Martin had checked the university guidelines and then searched *Google* for more information about doctoral oral defenses. He was aware of the variations of doctoral dissertation defenses and figured that institutions, committees and candidates all shaped what a dissertation defense would look like. Martin contacted some colleagues in a few universities and asked them about doctoral dissertation defenses. He also had an online mock defense with his supervisor

and several graduate students. Martin felt the mock defense provided him with the most helpful information and assumed that most of the questions asked at the mock defense would be asked in the actual defense. In preparing his presentation, Martin carefully re-read his literature review and reviewed the research design. He paid particular attention to the limitations and contributions of his study because these were spots in the dissertation where he "*didn't do as a good job*." Martin believed that he would be asked about the statistical analysis in his research. In selecting the committee members, Martin and his supervisor considered mainly the research areas of the potential members as well as their availability.

Martin's defense was held in the morning in the conference room of the faculty of education. Martin arrived half an hour earlier to set up his computer and prepare for the defense. Martin's defense committee was composed of six members, including the Chair and his supervisor. The committee meeting started later than the scheduled time and consequently, the public session was delayed for 20 minutes. There were six people in the audience and all were graduate students.

Martin presented his research for 23 minutes following a traditional structure, going from literature, research questions, through methodology to findings, limitations, contributions, and future research. He then received 21 questions from the defense committee in the following 66 minutes. Of these questions, one belonged to Category B (*theoretical perspectives),* nine to Category C (*practice of research)* and 10 to Category D *(demonstrating doctorateness).* Martin categorized these questions into several groups: the easiest were those about clarifications; the hardest were those regarding how his research fit into "*the bigger picture*"; between them were questions about his research

design and implications. Overall, Martin felt he had "*an OK experience*" and it was "*very much like what I expected*."

In the questioning session, Martin balanced knowing and not-knowing firstly by consulting other experiences of his. For example, in handling the first three questions, Martin provided answers based on "*anecdotal evidence*" from his teaching: "*because I have taught this case about 4-5 times."* At the same time, Martin admitted that the issue in the questions was one of the limitations of the project:

> *I answered by saying that the reason I couldn't look into it was because I didn't have time and if I had the luxury, I would have had a third group that would actually do that and then compare to see if that makes a difference…I think I answered it fairly well, because … it was not like I was trying to hide it. I knew there was an issue, I knew this was a weakness in the study, but this is the first study of its kind in this area and a subsequent study should look at it more carefully. (Martin, post-defense interview)*

At another question, which came from the external member, Martin *"[didn't] think it was related*" and defended his stance by explaining that not addressing the issue was *"on purpose."* As for a question from the external examiner, Martin considered it irrelevant to his research and thus he said *"I don't know."*

For Martin, balancing knowing and not-knowing was not easy and not always possible. One of the committee members, who was on Martin's advisory committee, asked the "*most troubling question*" in the defense. While Martin "*tried to skate around it and tried to give some sort of answer,"* he only found himself in a difficult position of "*rais[ing] more questions.*" Not being able to provide an answer, Martin decided to

"put a couple of pages in the thesis … explaining how I used the terminology and how is it different from the other uses." As well, Martin struggled in answering other questions beyond his own area of expertise:

> *Questions that were to do with the broader set of literature [and] the broader research were the hardest ones to answer, because I just didn't have enough depth or knowledge of the other areas and how they related or how my area related to those areas. I knew some of it but I didn't know it as well as I knew my own area. (Martin, post-defense interview)*

Martin made the most revisions compared to all other participants. After the defense, Martin and his supervisor agreed that Martin would make "*8 or 9 revisions*" to the dissertation based on "*2/3 of the questions that were asked*" "*to try to satisfy one or two questions asked by each committee member*."

Max

Max, in his late 40s, was an elementary-secondary school teacher and an educational administrator. He held a master's degree from the researched university and had years of teaching experience at elementary-secondary levels. Max identified himself as "*a novice competent researcher*," who had strengths in implementing research findings and "*organiz[ing] and present[ing] information so that it is not overwhelming*." Max's doctoral research reported on the early stage findings from a larger project that he had been conducting in his work, which was about improving the school system in the community where he came from. So Max's researcher self intertwined with his other identities as a teacher, an administrator, and a member in the community where he was

conducting the research. Max had a relatively smooth doctoral journey in that although he had difficulty balancing his work and study, he did not have difficulty in designing, carrying out, and writing his research. Max had five non-peer reviewed presentations and did not have any publication. After graduation, Max would continue being an educational administrator and would continue the ongoing research project.

Max viewed his preparation for the defense as beginning a couple of years ago when he started reading some doctoral dissertations related to his research topic. Throughout the PhD study, Max asked other PhD students about their defense experiences; during the month prior to the defense, he checked with his work colleagues about their defense experiences as well. For Max, an important source of information was the internet. After browsing the website of the researched university for the guidelines, Max searched the web for possible questions in the defense and for videos of real defenses in order to have a sense of what a defense was like. Max attended a defense in his faculty that happened to be held a few days before his. He paid attention to the setting of the room and figured that the defense was for the candidate to "*show [his/her] … understanding of the research process.*" Based on all information that he had collected, Max anticipated that the challenging questions in his defense would be about his methodology, findings and conclusions. Max's supervisor nominated the members on his defense committee.

Max's dissertation defense was held in the morning in the conference room of the faculty. The defense committee was composed of six members including the Chair and the supervisor. Six people were in the audience, who were Max's wife, his father, his uncle, an administrator working in Max's community, Max's supervisor for his master's thesis, and a doctoral student working on a similar topic.

Max gave a 25-minute presentation, going from the background of his research, the problem, through methodology, to the findings and conclusions. He showed a map of the location of his research site and provided brief background information of the project. He was nervous while doing the presentation, yet overall he was pleased with his performance.

Max received 20 questions from the committee and two from the audience in the 63-minute questioning session. Of the 20 questions from the committee, eight fell into Category C (*practice of research),* and 11 in Category D *(demonstrating doctorateness)*. The remaining asked about how he would continue working on the project and thus fell into Category *Other*. Like in Bonnie's case, Max's supervisor did not ask all questions from the external examiner either. Of those asked, Max only named one as challenging. Overall, Max felt "*more comfortable than [he] thought*" in the defense and believed he "*did a good job."*

Max demonstrated his knowing by consulting his work experience as a teacher and an administrator when answering some questions. For example, he was able to provide an answer to an unexpected question because "*as a teacher and an administrator I know that*." Actually, there were a few questions that required Max to answer from the perspective of an administrator and a teacher. For example, Questions 2 and 4 asked how Max was going to address some problems in carrying out the project as an administrator and a teacher.

When Max's supervisor asked one of the external examiner's questions that suggested he remove the first person pronoun "I" from his dissertation, Max "*struggled a little bit*" because he "*didn't want to say that we [Max and the advisory committee] had*

already had those discussions and that we felt that was appropriate." Max ended up explaining why he made the decision on using "I."

Overall, Max "*kind of*" felt like an expert in answering most of the questions that he knew the answers to:

> *They were actually asking ME about stuff and I was able to answer…. That was interesting. They looked at me like "What do YOU think?" as opposed to "I am asking you a question and I already know the answer and I just want to see if you know it" (Max, post-defense interview).*

This feeling of being recognized as a peer by the defense committee strengthened Max's feeling of belonging to the community of researchers:

> *It was interesting [that] the people there who are already researchers and professors actually had an interest in what I was doing and believed that what I was doing was valid and made sense. I got a feeling … that they respected what I had to say and what I was doing. Kind of funny! I guess I felt possibly as a researcher because other people were interested in what I was doing. (Max, post-defense interview)*

Following the defense, Max was going to correct a few typos, remove some paragraphs, and discuss the use of "I" in the dissertation with his supervisor.

Clinicians-Researchers

The three participants in this group, Heather, Laura, and Maria, were all clinicians. Like Bonnie, Martin and Max, they were also practitioners who learned to

conduct research during the PhD. The three participants were similar in that they were all in their early 30s, came from the same PhD program, whose goal was to produce practical researchers, and were all clinicians at the time of their defenses. They were different in their backgrounds in that Heather was a landed immigrant from a non-English speaking country working as a part-time clinician, Laura spoke English as a second language and was working as a full-time clinician in a private agency, and Maria was part-time teaching faculty at a university and a part-time clinician at a hospital.

Heather

Heather, in her early 30s, was a part-time clinician in a hospital. She was a landed immigrant who spoke English as a foreign language. Of all the participants, Heather had the longest doctoral journey (8.5 years). Heather's research area was different from her supervisor's. Thus during her research process, she constantly found herself solving problems and overcoming difficulties on her own. She found a well-known researcher that she met at a conference to sit on her advisory committee; and when she had difficulty with her statistical analysis and was unable to find assistance within her department, she consulted a researcher from outside. Heather was very proud that she had made all the decisions independently during the research process, which allowed her to know her project "*inside out*."

Heather identified herself as a clinical researcher, who conducted research based on practice and wanted to apply research in practice. This identity was partly defined by her part-time job in a hospital, where she was already doing both clinical and research work. In addition, her researcher identity was also connected to her national identity. Her doctoral research was conducted in the country where she came from. She felt that the

project "*was close to [her] heart*" and would be "*very helpful for clinicians and researchers back home.*" Heather had four peer-reviewed presentations and two peer-reviewed publications, on both of which she was the second author.

Heather had attended a few defenses in her department before having her own, and thus had some sense about "*how people are doing a good defense*." For some reason, Heather was notified of her defense date only nine days prior to it and she started the preparation late. Heather spent the week prior to her defense "*reading [her] dissertation thoroughly*" to "*review everything*." She had two mock defenses, respectively with her supervisor and her lab members. Heather felt the mock defense helped her "*get into the mood*." Following the feedback received, Heather revised her slides to make them more visually friendly. Although Heather later found that the questions in the mock defenses were different from the real one, she felt the mock defenses prepared her to "*handle questions*" and to "*think on the spot.*" In addition, Heather presented her research to some of her non-PhD friends. Heather believed the questions in one's defense could be about "*any aspect of your research*" because the committee members had various backgrounds. Yet she did not check her committee's backgrounds assuming that "*at the end of the day they were going to ask me questions about what is here on my plate."*

Heather's defense was held in the afternoon in the conference room of the faculty. She arrived an hour earlier[24], with her husband and her baby daughter, to set up the computer. The defense committee was composed of six members including the Chair and the supervisor. Only two people were in the audience, both from Heather's research lab, with one to submit her own dissertation soon. Heather's husband and daughter waited outside until the end of the defense.

[24] The defense was postponed by 30 minutes for some reason.

Heather's presentation took 20 minutes. Unlike the other participants, Heather began by presenting the contributions of the research, although the rest of the presentation followed the traditional structure. Heather received 28 questions in the following 80 minutes from her committee, including one from the Chair. Of these questions, 12 belonged to Category C (*practice of research)* and 16 to Category D (*demonstrating doctorateness)*. Heather felt half of the questions were easy, "30% were in the middle," and "20% were tough." Heather named two challenging questions. One was about her interpretation about some statistical results from an internal member, and the other was about the implications of the research from the external examiner. Heather was very nervous during the presentation, became "*fine*" once the questions began, and felt exhausted at Question 20. Overall, Heather thought she "*did fairly well*."

Heather tried to balance knowing and not-knowing in answering the questions. In handling one of the challenging questions, for instance, Heather knew that the issue did not "*hold much weight*" for her study and thus she frankly told the committee that she did not have the answer. As for another question asking about an alternative interpretation of a certain finding, Heather *knew* the issue in the question was out of the scope of her dissertation and clarified this in her answer. Heather was not able to provide an answer to the other challenging question, which was from the external examiner (asked by the supervisor), for she wondered whether the external examiner was "*talking about clinical research or just pure research from a theoretical perspective.*" Heather paused for a while, and after her supervisor repeated the question, Heather still did not say anything. After the defense, Heather said,

> *I think I would do a better job of it if I had to answer it again. … Maybe I was nervous, maybe that's why I didn't understand the question properly. Maybe the way it was phrased because later on I was comparing notes with my two other friends who were also there at the defense, and they also felt that the question was not clear. (Heather, post-defense interview)*

Clearly Heather was stuck because she did not understand the question well. She might have been able to provide an answer if she had asked her supervisor to paraphrase or clarify the question. Despite this unanswered question, Heather believed she had been thought of as a competent researcher before and during her defense because her advisory committee "*were impressed with my research.*"

After the defense, Heather was suggested to remove a sentence and to add a paragraph regarding the research site.

Laura

Laura, in her early 30s, was a full-time clinician in a private agency. Graduating from a doctoral program whose goal was "*to train people to be scientist practitioners*," Laura saw herself as a "*scientist practitioner*" who believed that "*my understanding of the research … will benefit me in more practical ways.*" Having only completed two research projects (her master's and doctoral studies), Laura was aware that she was "*still pretty green*" as a researcher. On the other hand, she was confident about her research competence, feeling "*very well prepared to begin a career as a novice researcher*."

During her doctoral study, Laura had difficulty analyzing her data using an analytic strategy recommended by one of her advisory committee members. After consulting various people and trying it for a long time, Laura decided to give it up. She

learned from this experience that she needed to know more statistics. Therefore, in the last year in her PhD, Laura took some extra courses in statistics, believing that knowing more about statistics would make her a better researcher. Considering this experience, Laura anticipated that she would be asked about this alternative analytic framework in her defense. Laura had three peer-reviewed conference presentations and four publications (two peer-reviewed). After graduation, she would continue working as a full-time clinician at the agency.

Laura attended two defenses in her department in her early PhD years, from which she got the impression that the dissertation defense was "*nerve-wracking*." Around a week prior to her defense, Laura first re-read her dissertation and "*took short-hand notes of everything.*" Based on her 16-page notes, Laura made her presentation slides. As when she had prepared for "*bigger projects,*" Laura first made more slides than she needed for the presentation and then only kept those that she felt the most important. She also printed out a few "*bigger-picture*" articles that were "*not directly related to [her] dissertation*" but could help her to "*get an idea of where [her] project fits*." Also, following the advice from an academic friend, Laura did a background check of her defense committee members. Having not found much information from the website of the university regarding the doctoral candidate's defense performance, Laura consulted her supervisor and friends. She had a dry-run with her supervisor and lab mates and received feedback on her "*presentation skills*." Finally, Laura visited the defense room beforehand and got all her research instruments ready for use in the defense.

Laura's defense was held in the conference room of the faculty in a morning. Thirty minutes before the scheduled time, Laura was already in the room and had set up her computer. On the table right in front of the podium were a hard copy of her

dissertation and her research instruments (forms and questionnaires) in a pile. Six people were on the defense committee, including the Chair and Laura's supervisor; five people were in the audience: Laura's boyfriend and four graduate students.

Laura's defense started a few minutes later than scheduled. Laura first presented her dissertation for 20 minutes going from the purposes of the study, through methodology, to results, limitations and future research. She then received 24 questions from her committee in the following 66 minutes. Of these questions, one belonged to Category B (theoretical perspectives), 10 belonged to Category C (*practice of research)*, 11 belonged to Category D (*demonstrating doctorateness)*, and the remaining two, both from the Chair, belonged to the *other* category. For Laura, easy questions were those that required "*concrete answers*." One such question was about the definitions of the variables that Laura categorized in her dissertation. The most challenging question was from Laura's supervisor, who asked her about the significance and implications of her study in practice. Overall, Laura thought her defense experience was "*great*" and "*excellent*."

In answering a question from the external examiner (asked by her supervisor), Laura frankly told the committee that she *did not know* much about the issue in question. Yet she clarified in her answer that she *knew* something about it and that it was not the focus of her research:

> *It's relevant to my field. … It was a very reasonable question. …I mean there's a lot of overlap between problem behaviours and that's why I wanted to include other problem behaviours. But the purpose was never to do an exhaustive or comprehensive literature review of the other problem behaviours. So I felt it was OK to say "I don't know" (Laura, post-defense interview).*

Laura was not able to provide an answer to a question that she identified as easy. Yet she "*felt fine because I know those things were very easy to look up in a book and I know that they know that I know how to look it up in the book*." Interestingly, Laura interpreted this member's intention as "*screening*" her:

> *I think that she quickly realized that … I'm not a statistician and I don't know this stuff like the back of my hand. So I think that it helped her to word her questions, like I think it helped her to know how to ask me certain questions. I think she was just trying to quickly screen me to see how much I knew about statistics so that she could kind of gauge how to approach me and … how far to go. (Laura, post-defense interview)*

Further, Laura believed that her competence had been recognized before the defense and would not be reversed by questions like this one:

> *I didn't feel that bad because I knew I had put so much work into the statistics part of my project that I knew that they knew that that's the kind of thing that I could look up and quickly find the answer to. It didn't bother me that I didn't get it right. And I think if I hadn't prepared as much for the statistics and data analysis, that might have really upset me in the defense because I would've been like "Wow, now they know I don't know anything!" But it didn't upset me at all because I was like, "I know they know I know something because I worked really hard on that part of my dissertation" (Laura, post-defense interview).*

The most challenging question was from Laura's supervisor, who asked her about the contribution of the research to school practice. Laura "*had to stop and think*" and had

to admit that "*that's a good point!"* In her answer, Laura tried to place her research topic within the literature to show her knowing.

After the defense, Laura was suggested to make "*very minor*" revisions including correcting two typos, and adding one citation based on a question raised in the defense.

Maria

Maria, in her early 30s, was a part-time lecturer at a university and a part-time clinician at a hospital. She was trained to be a psychologist and needed a doctorate to become licensed. Maria identified herself as "*more as a clinician than … a researcher*." And having completed only two projects (her master's and doctoral studies), Maria felt she lacked research experience. Maria believed that "*researchers inform clinical work and clinicians inform researchers*" and that one of the advantages of being a clinician was to "*identify good research questions as I work.*" Maria's dissertation research questions were closely related to her clinical work, and she was very happy that in the hospital where she was working, she had "*protected time to do research*."

Maria's research topic was not directly related to that of her principal supervisor's, and she managed to find a co-supervisor, who worked in another country. Maria benefited a lot from working with this professor, who was "*one of the leading researchers*" in the research area. He helped Maria with her research questions and research design. Despite the relatively smooth start with the help from the co-supervisor, Maria still had "*tons of problems*" in collecting data, which she overcame on her own. Maria had four publications (one peer-reviewed and three not peer-reviewed) and wanted to submit a journal paper shortly based on her dissertation. After graduation, Maria would continue her work in the hospital and at the university.

In preparing for her defense, Maria created her presentation slides and sent them to both supervisors for feedback. She also brainstormed questions with them and anticipated that she would focus on statistical questions as well as on methods and results. Maria found the relevant information on the university website "*pretty limited*," and she had not attended any defense beforehand having been living and working in another city since the third year in the program. To learn more about the defense, Maria asked many doctoral graduates about their experiences, which she felt "*the most helpful*" for her preparation. Maria had a general idea about the background of her committee members, and was happy that "*none of them are statistics professors*." She had a mock defense with her lab members and her supervisors a few days before her defense, which was "*standard in [her] lab*." Maria thought that any questions directly from her dissertation would be easy, whereas questions about interpreting "*the unexpected data*" or "*theories or topics or statistical analysis that I don't know anything about*" would be difficult. She figured that it would be fine not to provide "*the perfect answer*" but only an answer "*to a certain extent … as long as I can support my rationale*."

Maria's defense was held in the morning in a classroom in the faculty, as the conference room had been booked for other purposes. Twenty minutes prior to the scheduled time, Maria was in the room and the computer and the projector had been set up. There were six members on Maria's defense committee, including the Chair and her principal supervisor. Maria's co-supervisor was not present. There were six people in the audience, all graduate students.

As the pre-defense committee meeting started late, the public session of the defense began 13 minutes late. Maria presented her research for 22 minutes following a conventional structure, beginning from the research questions through methodology to

findings and implications. She then received 29 questions in the following 67 minutes. Two questions fell in Category B (*theoretical perspectives)*, 16 in Category C (*practice of research)*, and 10 in Category D *(demonstrating doctorateness).* The remaining one question asked Maria's professional plans and fell in the *other* category. As Maria had anticipated, there were questions asking about her interpretation of the data, which she *"[had] been thinking about*" and thus felt easy. Maria identified two difficult questions, with one from the representative of the departmental chair, and the other from an internal member. Overall, Maria felt that her defense experience was "*positive*" and that she "*met the standard of what [her defense committee] were looking for.*"

One of the difficult questions was about recommendations for policy makers based on the research. Maria *"[did] not know much about policy*" and had "*not really thought about it yet.*" Yet she managed to provide an answer based on all she knew about her dissertation. As for the other difficult question, Maria

> *wasn't sure what [the questioner] was looking for. Like I didn't want to … sound overconfident or look I was saying something too soon from my data. So that's one of the reasons I decided to answer the way I did. (Maria, post-defense interview)*

"*The way I did*" was providing an answer that was strictly based on what she *knew* about her data:

> *I said if she were asking me yes or no, then I would have to say no because I didn't find strong correlations between X and Y, which I think is necessary to have before you can say that it is a valid measure. So that's why I said no. But I mean, I*

think that she put me in a hard place to say yes or no. I think the answer really would have been "Yes with more research," like maybe later on, not now, not after my project alone. (Maria, post-defense interview)

In answering an unexpected question for the external examiner (asked by the principal supervisor), Maria *knew* where the question came from and *knew* part of the answer.

I think [the external examiner] asked it because you can only answer a question like that if you truly understand X. And that's just such a specific thing, like us psychologists, even a developmental psychologist wouldn't really know something like that. So I think he was trying to get me to really think about specifics about [my topic], like real fine details. … I think what I said initially was valid but then it wasn't specifically everything [that the external reviewer] was looking for. [He] was looking for more of an answer around X. So in some ways I was happy with it because I think there is lots of ways I could have answered but at the same time I didn't happen to speak specifically to what he was looking for. So I think I was like 50/50 percent. (Maria, post-defense interview)

After the defense, Maria had "*nothing mandatory*" to revise to her dissertation.

Researcher Between Communities

Helen

Helen, in her 50s, had worked as an assistant professor at a comprehensive university for two years at the time of her defense. She started her PhD in the U.S.A. and followed her first supervisor, who re-located in Canada. Helen's dissertation involved two

fields of study, history and education, and her first dissertation was failed by the external examiner because, according to her, the dissertation was interdisciplinary whereas the evaluator was a historian. This happened right after she began a pre-tenure position in another university, and shortly after the failure, Helen's supervisor died. Helen finally found a new supervisor, who was not in her area, and a mentor, who was in her area but working at another university. And she submitted a new dissertation in a year and a half while continuing in her academic post. Helen identified herself as a researcher, who liked writing and pulling things together, and strongly believed she was "*an expert*" on her dissertation topic. She had seven peer-reviewed publications and seven conference presentations.

Helen attended a few defenses before her own and had a dry-run with some colleagues at the university where she was working and incorporated their questions into her presentation. She also checked the university website for information about the oral defense and asked her supervisor about the format of the presentation. Helen anticipated that the challenging questions would be about how her research findings might be generalized to other contexts. She thought that if this was asked, she would say that her research might only be generalized to some provinces in Canada. Helen was aware that she would not be able to answer all questions and planned to "*deflect*" those that she was not able to answer.

Helen nominated the external examiner of her dissertation. All other members on her defense committee were nominated by her new supervisor, for Helen felt "*done with it*" after a long process of completing her second dissertation. Helen did not check the backgrounds of the two examiners whom she did not know and said, *"I am not trying to find connections between their work and mine. I am defending MY work."* Helen did not

think her committee would ask difficult questions, and she said jokingly that this was because she had suffered enough.

Helen's defense was held in the afternoon in the conference room of the faculty. Helen's defense committee was composed of six members, including the Chair, her supervisor and mentor. Thirteen people were in the audience, including Helen's brother, her friends, and a few graduate students of her first supervisor.

Before the presentation, Helen distributed handouts to the audience that had an abstract and the structure of her presentation. In the handout, the research questions were presented as *Acts* and *Players*, imitating theatres. Then in her 20-minute presentation, Helen used red curtains as the background of the slides, also imitating theatres. Helen was reading a script in order to keep the "*high-stakes*" presentation to time. Helen received 16 questions in the 79-minute questioning session. Of these questions, 10 fell in Category C (*practice of research)*, five in Category D (*demonstrating doctorateness)*, and one in Category *Other* (a factual yes/no question). When the committee and audience was congratulating her on her successful defense, Helen went back to where she had presented, took out a pin given by the university where she worked and put it on in her shirt. On it was printed *Dr. X*. Helen described her defense as "*dream-like*," which "*went by very, very quickly*." Overall, Helen was satisfied with her performance and thought she had met the examiners' expectations.

Writing her second dissertation "*firmly in historical discipline*" yet having a committee composed of educational researchers, Helen was not surprised when she had to "*straddle*" different fields in her defense:

> *As the questions were being asked of me, I realized—and I knew this was going to happen—that there was only one historian in the room. And my thesis was historical. …. I almost felt that I was being drawn back into a conversation that I might have had with my early thesis. So it was a bit strange. As I was listening to the questions I thought, "Well, that was not a question that <u>we</u> ask as a historian!" .... I felt as though I was being asked to straddle in the defense whereas in the actual writing of the thesis I was not required to straddle—I was firmly in historical discipline. (Helen, post-defense interview)*

As represented by "*we*," Helen felt comfortable to identify herself with the community of historians. As well, Helen negotiated her competence as a historical researcher by balancing her knowing and not-knowing. For example, in answering one of the difficult questions, which asked her to justify one of the claims that she made in the dissertation, Helen realized that "*on the basis of the evidence that I found that was difficult"* to make that claim, however, she argued that as a historian, she did

> *triangulate. I find this piece of evidence and then when I combine it with that piece of evidence and with that piece of evidence, you know, I can say with some degree of certainty – certainly that can never be—because I wasn't there—but excuse me this is what I think had happened. (Helen, post-defense interview)*

At other points, Helen answered questions more from an educator's perspective. For example, in answering another challenging question— what Helen called "*a layman's question*"—she provided a general answer from a teacher's perspective:

> *I don't know how historians would [answer it]—that was where I felt I was sort of moving out—…. I was talking to somebody afterwards about the whole idea of <u>we</u> are teaching students to do history, not to learn history… teaching students to become historians and to think like historians. That's what <u>we</u> want to do. And a history textbook, all it has is the facts to be memorized. That just encourages rote learning, which is not what <u>we</u> are looking for. (Helen, post-defense interview)*

"*We*" clearly refers to history teachers as Helen once worked as a teacher at the elementary level. Thus, in answering this question, Helen used other experiences to facilitate her performance as a researcher.

Helen only needed to correct a few typos and to add a few people to the acknowledgements section of her dissertation.

Disappointed Researcher

Karen

Karen, in her early 30s, would start her post-doc shortly after her defense. Holding Bachelor's and Master's degrees from a different field, Karen embarked on her PhD in education in the hope of changing her field of study. During her doctoral journey, she managed to overcome the challenge of building a theoretical framework and articulating clear research questions by working with a reading group composed of doctoral students interested in similar areas. Karen's first dissertation was failed by the external examiner, who "*was uncomfortable with the genre of the writing*" and required her to re-structure the dissertation and to present more "*narrative evidence*" from the data. Karen then submitted a second dissertation within two months. Although the second dissertation was

well received by the examiners, Karen said the failure made her "*even more nervous*" about the defense.

Karen "*[thought] of [herself] as a researcher*," yet she felt "*more confident with reading and writing than …doing the actual research.*" Karen regretted not having worked with a research group during her doctoral study and strongly believed that having a mentor working with her would give her more confidence with doing research. She expected that her post-doctoral position would improve her research skills. Feeling "*uncomfortable for an academic position*" immediately after the PhD, Karen was flexible about the jobs that she was willing to take, including a faculty position at a college or comprehensive university, a professional position, or a teaching/administrative position at elementary or secondary levels. Karen had six publications (three peer-reviewed) and 10 conference presentations (five peer-reviewed).

Karen started attending defenses in her second year into the PhD and had attended over 10 before her own, the most of the participants. Although what attracted Karen to the defenses was mostly the dissertation topics, this experience allowed her to "*know the kinds of questions and the kinds of presentation styles that people do and what works and what doesn't work*." Karen started preparing for her presentation about two weeks before her defense and it took her five days to finish, longer than she had expected. She said the major difficulty was the short time allotted to the presentation, and because of the time limit, Karen decided to read from a script in her presentation.

Karen had a dry-run with her advisory committee and two friends, where she received feedback on her presentation. At the same time, Karen was confused about the mixed advice given by her committee and wondered whether the defense was for her to summarize the dissertation or extend it. Finally, Karen figured that the defense was for

both. Karen was aware that her committee was not expecting her "*to be able to answer all of their questions about theories*" but to "*be prepared to answer questions about implications and about further research*." Karen anticipated that the challenging questions in her defense would be those asking her to speculate findings using alternative theoretical frameworks.

Karen's defense was held in the conference room of the faculty in the morning. The defense committee was composed of six people, including the Chair and her two supervisors. Fifteen people were in the audience and among them were Karen's parents, uncle and aunt, her boyfriend, her academic and non-academic friends, her post-doctoral supervisor and the PhD program coordinator. All audience was invited.

As planned, Karen was reading a script while presenting her slides, which went from the theoretical framework of the dissertation, through the methodology, to the findings and implications. In the following 55 minutes, Karen received 16 questions, including one from the Chair. Unlike all other defenses in the study, there was no question from the external examiner. All questions were "*really easy*" and most of them "*extended the dissertation*" rather than being directly related to it. Of the 16 questions, three were in Category B (*theoretical perspectives),* four were in Category C (*practice of research),* and eight were in Category D (*demonstrating doctorateness).* The remaining one, which asked Karen about her post-doctoral research, fell in Category *Other*. When the committee came back to the room after a short judgment meeting, the Chair asked everyone to go back to their seats and be quiet. He then asked the candidate, the committee, and the audience to stand up and announced Karen Dr. X. Two of Karen's friends raised cardboard-made hands shouting "Dr. Karen, Dr. Karen!" And in the

applause, another friend gave Karen a present. Karen felt very happy to have a defense "*more formal*" than she had expected due to the Chair's behavior.

Karen identified herself as a member of her field of research. Yet she did not feel this way in her defense:

> *for me giving presentations at conferences [makes me feel] more like a researcher than I did after my defense. … at a conference presentation the questions that you get are much more specific to your research and there is more people in your field there so then I think you would feel more like a member of the field and a researcher. (Karen, post-defense interview)*

Karen's feeling of not being in her own research community was mainly due to, as she indicated, the composition of her defense committee, which "*was made up of people who do bits and pieces of work that is related to [her work]*." As a result, few questions were directly related to her dissertation. Karen was disappointed that no question asked her about the central concept of her dissertation, which she "*was prepared for*." Actually, Karen was disappointed about the lack of challenging questions in her defense:

> *I didn't feel at all that … people were trying to see if I understood or see if I knew what I was talking about. I think everybody was starting with the assumption that what they read they liked and then they just wanted vague questions about the field in general. …. I think it was good that it was easy and that it is done but … I thought I could be more challenged. … I mean it is a PhD so I don't want to feel like people are just letting me off the hook because I had to write my dissertation twice. (Karen, post-defense interview)*

Encountering no challenging/difficult questions, Karen did not need to balance her knowing and not-knowing as often as the other participants. Yet when a committee member asked her about a certain theory, Karen demonstrated her knowing by providing a general understanding and speaking "*anecdotally*":

> *[Her] question about X theory was one that I hadn't really thought about …. I don't explicitly use X theory but I do use Y theory that really comes out of X theory so I could speak to it …. I thought that it would be a frame for that kind of research so I didn't find that one difficult. I just found it interesting…. [I answered it] as well as I could given that I could only speak anecdotally. I can't really speak from my own data and I didn't do that kind of analysis so it wouldn't be possible for me to speculate. (Karen, post-defense interview)*

Karen identified herself as a researcher before the defense, believed that she had been recognized as such by her defense committee, and would start working as one after getting her PhD. Yet she was disappointed at not being able to perform what she expected to perform in her dissertation defense. Also, unlike other participants, Karen felt "*a little anticlimactic*" after the defense, saying that "*It was a relief, but not the big celebration I suspect others feel.*" Karen only needed to correct a couple of typos in her dissertation.

Student-Researcher

Patrick

Patrick, in his late 30s, was a landed immigrant speaking English as a foreign language. He held a master's degree in the same area as his PhD from the university. Patrick identified himself as a "*student-researcher*" as opposed to a "*real researcher*." He

believed that a "real researcher" was able to "*organize and … do research on [one's] own*" whereas a student-researcher was "*supervised and guided*." Patrick began to feel "*more like*" a real researcher before his oral defense. Yet he still strongly felt "*a portion of student*" in him since he had to "*be judged in front of a judging committee*." As a researcher, Patrick was confident about his knowledge and research methodology (his dissertation was qualitative), although he felt relatively weak in the quantitative approach. Patrick thought that the most important characteristics of researchers were being knowledgeable and being able to make contributions to "*the society and to the academic field*." Patrick encountered two major challenges in his doctoral study: building a theoretical framework for his research and analyzing data. With some help from his supervisor, he overcame them through "*reading a lot of literature*." Patrick had a part-time teaching job (teaching his mother tongue) during his study and expected to find a full-time faculty position at a college or a comprehensive university after graduation. He had one peer-reviewed journal publication and several conference presentations.

Patrick made thorough and careful preparations for his defense. He first checked the guidelines for the doctoral dissertation defense on the university website. Then in order to have "*some idea what kind of questions and how the candidate presents*," he attended several defenses in his department, and attended a workshop organized by the Graduate Studies Office of the university that aimed to help doctoral students prepare for their defenses. Patrick had a dry-run together with another doctoral student who would defend at about the same time, and presented to a professor from the department and several graduate students. Patrick's supervisor did not attend it because she was on sabbatical in another country. Patrick received lots of feedback on his presentation and had the opportunity to anticipate questions. He thought that difficult questions would be

those challenging his methods and theoretical framework and easy questions would be those directly about the "*result, discussion, implication.*" Patrick read his dissertation several times and practiced his presentation over 30 times. He selected his defense committee members with his supervisor based on their research areas.

Patrick's defense was held in the afternoon in the conference room of the faculty. Before the defense, the table in the room was removed and the seats were re-arranged into rows. The seats for the committee were placed in the front and those for the audience were placed behind. Patrick's defense committee was composed of six people, including the Chair and Patrick's supervisor. There were 10 people in the audience, including professors and graduate students from Patrick's department. Before the public session, Patrick passed around pamphlets that contained the title and abstract of his dissertation, composition of his defense committee, and his brief CV.

Patrick's defense was the shortest of all defenses in this research. It also had the shortest pre- and post- defense committee meetings. Patrick presented his work for 17 minutes following a conventional order from research questions to discussion, implications, and directions for future research. He was so nervous at the beginning that he forgot to explain a few slides and thus finished the presentation two minutes earlier than he had planned.

Patrick received 17 questions from his committee and two from the audience in the 60-minute questioning session. Of the questions from the committee, one fell in Category B (*theoretical perspectives)*, seven in Category C (*practice of research)*, and nine in Category D (*demonstrating doctorateness)*. Several questions were what Patrick had expected or addressed during his research process. Another few were "*relatively easy,*" which were directly about "*the content*" of the dissertation, such as "*the*

background of my research site and research participants." As a non-native speaker of English, Patrick was very happy that none of his committee members used complicated language in wording the questions. There were two difficult/challenging questions, respectively from the external examiner (asked by the supervisor) and an internal member. Overall, Patrick felt his defense "*went well*" and was "*satisfied with [his] answers*."

In answering the questions, Patrick felt he was pushed to perform as an independent researcher:

> *I can't have any help from my supervisor because I am alone there, on my own. … Normally before the defense, I can always go … to my supervisor or committee members to get help. But … during the defense, I had to be there on my own. … It was my first time to say "OK, I think this …" But before that "I think this…" means my supervisor agreed; my committee agreed; someone else agreed. "I think this…" means I think as a researcher, not a student any more. (Patrick, post-defense interview)*

Thus, although Patrick did develop a sense of research independence during his doctoral study—which was represented by his efforts to independently develop a conceptual framework for his dissertation research and complete data analysis—the defense was the site where he became more aware of this independence as a researcher. Further, Patrick had a sense of being a peer of his defense committee:

> *They treated me like a researcher. OK, it's YOUR research, so what do YOU think? …. I felt like they want to know MY idea, my OWN idea…. So…I had to*

answer under the assumption that I am a researcher. (Patrick, post-defense interview)

Like other participants, Patrick tried to balance what he knew and what he did not know in answering questions. When he was asked whether his findings could be applied to other contexts, Patrick realized that he *did not know* much about the contexts that the questioner was talking about. Yet he was able to provide an answer based on his knowledge about his research context and the literature:

He [the member] brought several other ethnic communities and different cases from other ethnic communities that I don't know very well…. He wanted to compare them with my study. It was kind of hard. I know my study well but I don't know exactly about other communities. … Luckily I found several studies, which I cited in my literature review. So…I could come up with some examples. …I knew the other ethnic communities' immigration histories are longer than [the researched community]. So … I could explain. I think I answered it well because I know their histories. (Patrick, post-defense interview)

For another challenging question, Patrick made it very clear in his answer that addressing the issue in the question would "*change the direction*" of his study.

As for the revisions, Patrick would correct several typos and discuss other changes with his supervisor. He stressed that he would not make all revisions suggested in the questions in the defense because some would "*change the direction of the thesis*."

In summary, this chapter has presented each case as a narrative that weaves together each doctoral candidate's prior experience, defense experience, and their sense of being a researcher. It is apparent that the 11 candidates had various prior experiences, which shaped the ways in which they viewed themselves as researchers, and accordingly how they performed in the defense and how they interpreted their defense performance. On the other hand, all participants were trying to demonstrate knowing and negotiate not-knowing in performing as researchers in the defense. Next chapter presents the cross-case themes.

CHAPTER 5: CROSS-CASE FINDINGS

> *The task of the examiners is to establish that by your thesis work and your performance in the viva you have demonstrated that you are a fully professional researcher who should be listened to because you can make a sensible contribution to the development of your field. (Phillips & Pugh, 2005, p. 137)*

The previous chapter presented the variations in the 11 participants' preparation and defense experiences while demonstrating similarities in their performance as researchers. This chapter presents six cross-case themes that emerged in looking for commonalities across all individuals (with some variation within these). The first three themes, *discrepancies between the institutional guidelines and student experiences, defense mainly attending to research process and PhD standards,* and *performing "straddling" researchers*, are mainly related to the first research question, which is *What are doctoral candidates' experiences of defending their dissertations?* In particular, the first theme addresses the meso-context of the cases. The last three themes, *making sense of not-knowing, defense as confirmation of researcher identities*, and *defense connecting researchers' past, present and future,* are related to the second and third research questions, which are *How do doctoral candidates make sense of defending their dissertations?* and *What do doctoral candidates' defense experiences reveal about their sense of being and becoming researchers, i.e., their researcher identities?*

5.1 Discrepancies Between Institutional Guidelines and Student Experiences

At the university where the research was conducted, the guidelines explicitly state that the defense can be "*inadequate*" and result in "*unfavourable judgement*." In other

words, since there is a possibility of a doctoral candidate failing it, the PhD dissertation defense is an exam. The guidelines also specify that the doctoral candidate "*must not approach any examiner or member of the Oral Defence Committee in advance to discuss details of the examination"* and that it is forbidden to provide the candidate with the internal and external examiners' reports before the defense. This is additional evidence that the defense is expected to be conducted as an exam. Although the examining function seems to be slightly softened by a statement in the guidelines that reads, "*The idea is to engage the members of the Committee in an enjoyable and scholarly discussion,*" it is still fair to say that the dissertation defense at this university is largely conceptualized as an exam.

The participants' conceptions expressed in pre-defense interviews largely corresponded with the conceptualization implied in the university guidelines. All 11 participants named examination-related purposes of the defense, including checking one's understanding of the research topic, authenticating, testing oral skills, and gate-keeping. Of these purposes, checking one's understanding of the research topic was the most frequently mentioned (7 participants: Hank, Heather, Helen, Laura, Maria, Martin, Patrick). A typical understanding is represented in what Maria said,

> *[The defense examines] that you have a good understanding of your research project. So how you designed it, that you understand the statistics that you used, why you used those statistics, and the methodology that you chose, to be able to defend your methods, why you chose those methods, why you chose the measures that you chose, and then to kind of defend how you interpret the data. (Maria, pre-defense interview)*

Three participants (Larry, Karen, and Patrick) named authenticating, another three (Bonnie, Laura, and Maria) named testing oral skills, and one mentioned the gate-keeping function (Hank: "*evaluating candidate's suitability in academia*"). Given that these were the purposes that the participants mentioned during their preparation periods, it was likely that they treated the defense, when preparing for it, as if it were an examination.

Yet in the post-defense interviews, nine participants referred to non-examination features. Of them, six (Laura, Helen, Max, Patrick, Heather, and Karen) commented on the interaction in the defense. Laura recalled how her defense turned into a conversation in the middle:

> *I remember just how good it felt to have a conversation; like it turned into [a conversation]. Sometimes when I was answering questions it felt like a discussion…. When the defense went from feeling very nervous to feeling like I was having a discussion. … Probably in the middle of the questioning session when one of the committee members asked about …how I would change schools in [city name] and I just realized we were having a conversation. It wasn't so much about my project anymore; it was more about the subject. (Laura, post-defense interview)*

Helen was so engaged in answering questions that she did not "*deflect*" questions as she had planned:

> *beforehand I talked about how I figure I am the expert and I can handle any question that is asked of me and if somebody asks me questions that I don't know about, I'll just handle that. And I don't think I did that at all! I think I engaged in*

questions that I really did not know the answer to and I have no sense of whether I answered the questions well or not. (Helen, post-defense interview)

Max and Patrick believed that their committees asked questions because they were truly interested in the research:

I didn't feel like I had to defend everything I did. I didn't feel like I was being defensive or they were asking questions and were attacking. It seemed to me they were all supportive of everything. So I was nervous but overall when you look back, everybody seemed interested, even the [chair], who I didn't think would be, because he is from Engineering. (Max, post-defense interview)

Every member was very nice. So in terms of their way of asking, sometimes they asked … in a challenging way but … they just wanted to know more. … they just really wanted to know about my study, because my study was very specific in a very specific context so—I mean it was very nice for me to answer because they all questioned about my context, my community, and my students. (Patrick, post-defense interview)

Heather felt her defense was "easy-going" although it still felt like an exam:

I think they were definitely testing me, it was an exam for sure. I cannot refute that. But it was more easy-going style. So that is how I felt it was a lot like a discussion, you know. It wasn't like "OK fine, here is the question, answer!" It was more like I gave an answer and then they probed some more … it was very interactive. (Heather, post-defense interview)

Karen implied that her defense was a formality, which made her disappointed:

> *[My defense] was really short. So part of me thinks that is okay, it was short and quick, but then part of me also thinks I don't think anybody really tried to challenge me and that is probably because I wrote two dissertations and people just wanted to let it go. … They didn't have any revisions at all. So I just think people want me to move on—I got that sense. (Karen, post-defense interview)*

Another two participants (Hank and Larry) commented on the relationship between the written and oral components. Hank did "*not think it was the defense that would have changed things; it would be the dissertation that would change things."* Similarly, Larry believed that the decision depended on the outcome of the dissertation evaluation:

> *I don't know what it takes to fail a defense, but I think it takes a bad thesis. If the reports from the external and from everyone are OK, you pass. Then it's impossible … that you fail the defense. (Larry, post-defense interview)*

Martin expressed the similar idea although he did not refer to the written dissertation: "*It was more of a tradition that needed to be done."* The remaining two participants (Bonnie and Marie) made no comment as to whether the interactions influenced the ways in which the exam was experienced or the relationship between the written and oral components of doctoral examination.

While failing the oral is possible according to the university guidelines, it is important to bear in mind that the external, deemed to be a subject specialist, has already passed the dissertation. All 11 participants passed their defenses successfully including

two who submitted a second dissertation, though all with minor revisions. Failing an oral defense is very rare in the particular faculty. I attended over 30 defenses in the faculty and all were successful. My personal communication with several faculty members confirmed that no student in the faculty had failed the oral defense before. But failing the oral did occur in another faculty at this university[25]. Hence it might be the culture of the faculty that influences the actual operation of the dissertation defense.

What the research revealed was that the defense was viewed and prepared for as an exam by the majority of the participants. Yet, post-defense interviews indicated that some modifications emerged to this view. For a plurality of participants their expectation of the defense as an "exam" was softened by the interactions they experienced in the defense. Of the remainder, three no longer viewed the exam as an exam at all. This raises interesting questions as to how a public exam is perceived by doctoral candidates.

5.2 Defense Mainly Attending to Research Process and PhD Standards

As mentioned in Chapter 3, the evaluation committee's questions in each defense were categorized according to a framework proposed by Trafford and Leshem (mainly Trafford, 2003; Trafford & Leshem, 2002b, 2008) based on their research on U.K. dissertation defenses. Briefly, they suggested that there were four types of questions in doctoral dissertation defenses: A – technology of the thesis, B – theoretical perspectives (literature-related questions), C – practice of research, and D – demonstrating doctorateness. Based on their data from 25 defenses in several disciplines, they proposed that most of the questions in successful defenses would be D questions (Trafford, 2003). In this research, while these categories functioned well, a few questions that did not fit in

[25] I attended this oral defense.

any of the four categories, and these questions were placed into a new category: E – Other.

In the 11 defenses, 228 questions were asked in total. Of them, 44% (100) were about the *practice of research* (C) and 45% (102) were about *demonstrating doctorateness* (D). C questions required the candidates to "demonstrate understanding of research as a process and an ability to undertake complex research in a critical and appropriate manner" (Trafford & Leshem, 2008, p.19). D questions reflect the standards of the doctorate, or as Trafford and Leshem (2008) stated, represent what distinguishes the PhD from other academic degrees:

> the doctorate degree exists to create and extend knowledge through purposeful research …. The quality and merit of this degree are usually assessed through a single piece of work, the doctoral thesis. Doctoral candidates report on their original research to demonstrate how they have made a scholarly contribution to knowledge. Then, in their viva[26], candidates defend their thesis and the research that they have undertaken. (Trafford & Leshem 2008, p. 35)

Figure 5.1 shows the distribution of the questions by cases. There was no A question; C and D questions were dominant in all defenses; and D questions were dominant in seven cases. Naturally, variations exist across the cases. For instance, four participants (Larry, Hank, Laura, and Maria) received questions in all four categories; six received questions in three categories (BCD or CDE); one (Heather) only received questions in two categories (C and D); and three participants (Hank, Heather and Max) did not receive any question in Category B.

[26] Viva in the U.K. is the equivalent of the oral defense in North America.

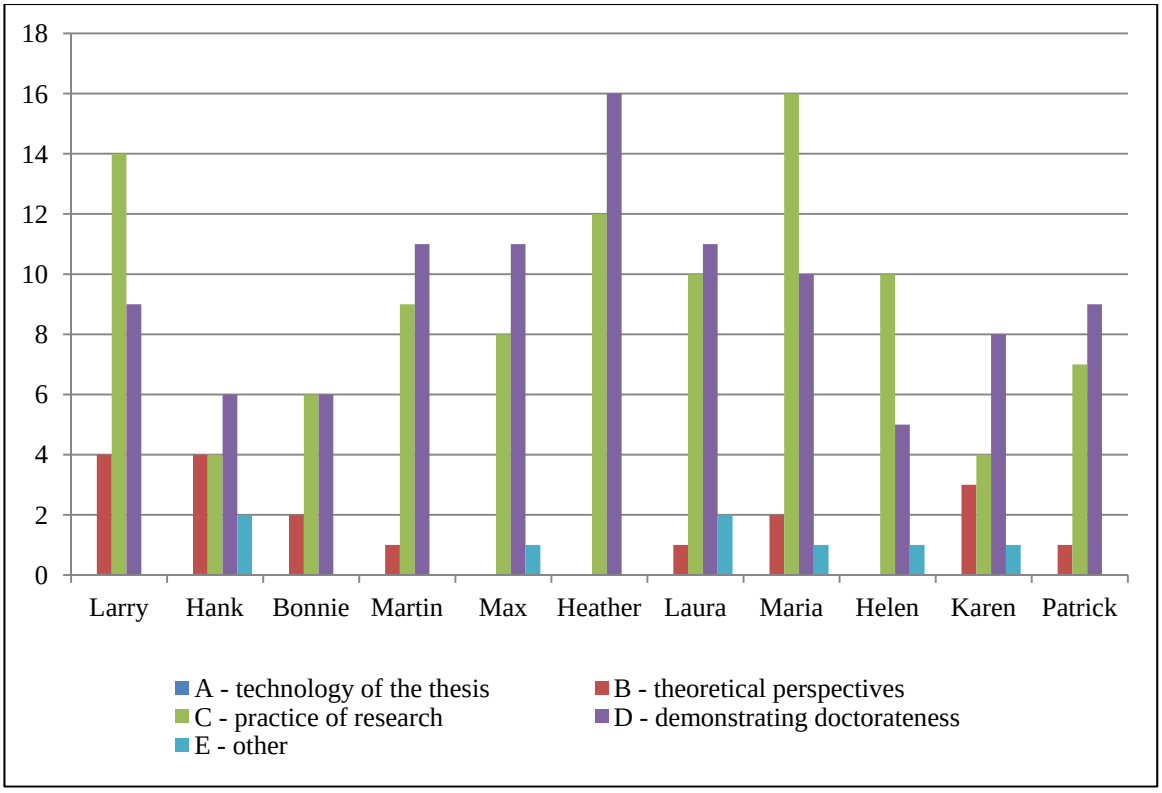

Figure 5.1 Questions by Categories in the 11 Defenses

Given the dominance of questions C and D in all 11 defenses, the doctoral candidates were all expected to show their knowledge about the process of conducting research as well as the extent to which they had reached the standards for the degree. In other words, the defenses attended to both the research process and the PhD standards. Further, the fact that D questions dominated in seven defenses seemed to be evidence that the majority of the participants in this research were still expected to prove that they had met the standards of the PhD, despite their relatively relaxing experiences as shown in the previous section. Table 5.1 provides some examples of the questions in each category. For ethical reasons, all questions have been modified to protect the identities of the candidates and committee members.

Table 5.1 Sample Questions by Categories from the 11 Defenses

Category	Sample questions
B: theoretical perspectives	• You used a lot of theorists who talk about power, such as X and Y. But you don't really address power in the thesis. Could you speculate how power was involved in your study? (Bonnie) • What is your rationale to ask the questions you have asked in your dissertation? Could you speak about this in the context of the literature? (Larry)
C: practice of research	• Why did you pick this topic? Why did you write this? (Helen) • How can you convince readers of the rigor of your study? (Bonnie) • You talked about you being both an insider and outsider. Can you talk about how they influence the methodology, methods, and results of your study? (Hank, Max, Patrick) • Could you talk about your sampling procedures? How did you choose the participants? (Heather, Patrick) • You have these tables of stats. Many effects are very small actually. Which effects are actually important? (Heather) • On page X, [mentioned some numbers] what kind of error do you think that reflects in terms of error statistics analysis? (Laura) • Have you found anything surprising/standing out/particular in your findings? (Helen) • You mentioned member checking, long emails and so on. It seems that there are a lot of things under the surface of the dissertation. I understand that some things were not allowed to report or explore, which was frustrating. In an ideal world, if you hadn't had those restrictions, is there other information that should be in the dissertation? (Karen) • You used the Web of Sciences. Why didn't you use Scopus? (Larry)
D: demonstrating doctorateness	• How would your results differ if you collect data from a large urban US environment? (Laura) • If the student participants and their parents in your study had access to all of your data, do you think they will come to the same conclusions as you have made? (Patrick) • Now you have these findings, so what? Why do we need to this? Why does this matter? (Larry) • What surprised you in your research? How did it inform you of the research? (Karen) • Would you do anything different if you could do your study again? (Bonnie, Heather, Larry, Laura) • Could you elaborate on the directions you would suggest for future research? How would you enlarge the study? (Bonnie) • How realistic is it that any of your arguments can be taken seriously by policy makers? (Hank) • You talked about teacher professionalism and agency issue. What are your recommendations for improving teacher profession? (Max)
E: other	• Are you going to present your work to the communities you worked with? (Hank) • What's next? What are you going to do for your post-doctoral research? (Karen) • What is now? You said your plan for the future was to be more inclusive to the communities and the teachers. Could you tell us more about your future plan? (Max)

In addition, C and D questions were more likely to be difficult/challenging. A comparison between the participants' anticipations of difficult/challenging questions and their actual experience (see Figure 5.2) indicates that questions in Categories C and D were both anticipated by the majority of the participants as difficult/challenging and experienced as so by all of them.

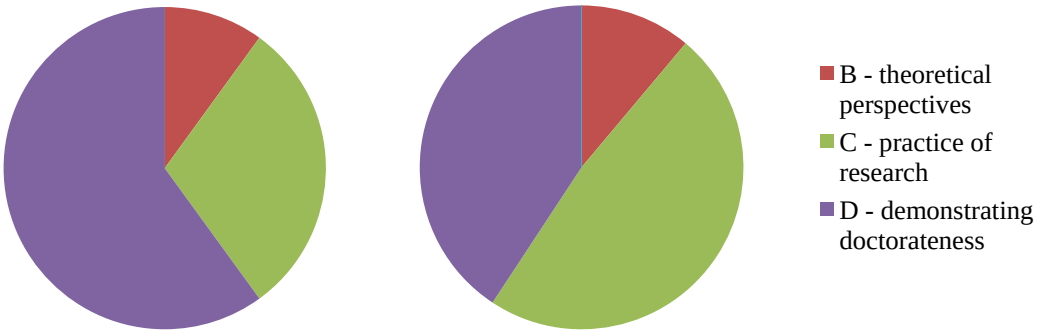

Figure 5.2 Pre-Defense Anticipation and Post-Defense Identification of Difficult/Challenging Questions (by Cases)

Table 5.2 displays some questions that were anticipated by the participants as difficult/challenging, and Table 5.3 displays some questions that were identified as difficult/challenging after the defense. We can see that before the defense, nine participants thought that C and D questions would be difficult /challenging, whereas after the defense, C and D questions dominated in all cases as being difficult/challenging. It seems that although the participants had made some preparation for answering questions in these categories, they still had some difficulty in handling these two types of questions.

Table 5.2 Difficult Questions Anticipated by the Participants

Category	No. of cases[27]	Examples
B	1	• *theories…that I don't know anything about (Maria)*
C	3	• *defending a qualitative stance (Bonnie)* • *explaining odd statistical findings (Maria)* • *statistics (Martin)*
D	6	• *interpretation of the data (Larry)* • *why I have chosen certain theoretical frameworks over others; why I've not used particular types of analysis (Hank)* • *why I chose the methodology that I did; questions related to my findings and conclusions (Max)* • *whether conclusions may be generalized to other contexts (Helen)* • *anticipating findings using a different theoretical lens (Karen)* • *why I chose my methodology (Patrick)*
Other types	2	• *very specific ones; where...you contradict yourself (Larry)* • *specific little details; questions from the chair or external (Bonnie)*

Table 5.3 Difficult Questions Experienced by the Participants

Category	No. of cases	Examples
B	3	• *Could you explain the key differences between term X and term Y? (Bonnie)* • *What is your rationale to ask the questions you have asked in your dissertation? Could you speak about this in the context of the literature? (Larry)*
C	8	• *On page X, you wrote "Y." What is your operating definition of "Y"? (Hank)* • *How do you draw interpretations from your results? (Larry)* • *How did you situate yourself as a researcher? (Max)* • *Can you talk about the Chi-square distribution on page X and implications of it?(Heather)*
D	7	• *On what grounds did you make claims regarding X?(Helen)* • *I am a school principal, and I know that X behaviors decrease in adults. Why should I be concerned about educating kids against X? What would you tell me? (Laura)* • *What recommendations would you make to public policy makers? (Maria)*

What questions are asked in the defense represents, to a large extent, the defense committee members' understanding about the purpose of the dissertation defense,

[27] Heather refused to anticipate and said, "*Right now I really can't answer [your question] because I don't know what people will focus on….They could … really question you from any aspect of your research.*"

although in this research defense committee members were not interviewed. The dominance of C and D questions in all defenses might indicate that the 11 defense committees used the defense to facilitate the candidates' learning from conducting research while ensuring they were up to the standards of the degree. Note while previous research in the U.K. reported the dominance of D questions in successful defenses, this research found C questions almost equally dominant. This might be evidence for slightly different purposes of the two formats of the dissertation defense.

5.3 Performing "Straddling" Researchers

"Straddling" was a word used by Helen when describing her experience of answering questions in her defense: most of the people on her defense committee were educators, whereas her dissertation was written in a different discipline. Helen expected the "straddling" to happen and was prepared:

> *As the questions were being asked of me, I realized—and I knew this was going to happen—that there was only one historian in the room. (Helen, post-defense interview)*

I have borrowed this word to refer to the finding that several other participants also navigated across research areas/fields, methodologies, and epistemologies in performing as researchers in their defenses. In this sense, they were also straddling. Besides Helen, seven other participants also referred to this aspect of their experiences: three anticipated this before the defense, like Helen, and the remaining four did not. The cause of straddling, as Karen revealed, was the composition of the defense committee:

> *I feel that like at a conference presentation the questions that you get are much more specific to your research and there is more people in your field there so then I think you would feel more like a member of the field and a researcher...[and] at the defense that is not the case. … My defense committee was made up of people …who … do bits and pieces of work that is related to my [research]. (Karen, post-defense interview)*

Bonnie had to defend the qualitative approach of her research when it was challenged by the external member, a quantitative researcher:

> *For the defense, [the qualitative approach] was only acceptable to people who were qualitative…. So I am glad I didn't change it [the part in the dissertation regarding the differences between the two approaches] that much. I am glad that I did my reading, because I thought all I need is just one person to just go "No way!"(Bonnie, post-defense interview)*

Given the various perspectives of the defense committee, Hank believed it was important for the candidate to "*balance[e] what you chose to do versus what other people think is important."*

The other four participants did not expect this aspect of their defense experiences and were thus caught by surprise. For Max and Martin, both were able to answer the questions that required a little "straddling;" yet both realized that the questions were not quite relevant to their research:

> *She [an external member from another department] looked at my research from a different perspective…and that was not something that I had thought about or considered in my research or at least not outright…. She kind of asked a question that I felt was a little bit outside of it. (Max, post-defense interview)*

> *He [an external member] wasn't at all familiar with that [the conceptual framework] and he was just looking at the practical. …He was just in a completely different domain. … I think it had to do with the background of the person. He himself is … more of a practitioner and maybe that's the reason he was asking that question. (Martin, post-defense interview)*

Maria had to improvise when answering a question beyond her research area—which she later identified as difficult—from the representative of the chair of her department:

> *I'd never really thought about it yet so… I had to think about that fresh… right there. … [It] was difficult because I'm not a policy researcher and haven't really had that much experience with policy making. That's [her] area of research. (Maria, post-defense interview)*

Finally, Larry had difficulty answering a set of questions from an external member. In retrospect, he blamed the differences in epistemologies between the two fields:

> *I was really challenged…not in my field of competence but in his field of competence. …I didn't have the tool to answer these questions…. I did manage to have an answer—I stood by my methods but— … the best analogy … is … a war, in which I am on this turf using his arms, not on my turf. So it is a fight on his turf,*

in his discipline while obviously I didn't have the tool to be able to answer the questions. (Larry, post-defense interview)

The remaining three participants (Laura, Heather and Patrick) did not explicitly comment on their "straddling" experiences. Yet based on the observation notes, they did try to address the various perspectives of their committee members.

Performing straddling researchers in the dissertation defense may be considered a norm at universities where a panel of scholars is used to evaluate the dissertation defense. At this particular university, as previously mentioned, the oral defense committee consists of 6-8 academics, in which the supervisor and the external examiner usually come from the candidate's research area whereas the external member(s), sometimes the internal member(s), are often from different areas; and the chair comes from a different discipline. All may pose questions[28] and all are voting members[29] who judge "*whether the candidate has achieved the substantial level of creative and critical scholarship necessary for a doctoral degree."* Given the various perspectives of the committee members, the candidate needs to perform a researcher who can navigate across borders (research fields/areas, methodologies, and epistemologies).

The above three themes mainly address the first research question, which is *What are doctoral candidates' experiences of defending their dissertations?*. The following three themes address the second and third research questions, which are *How do doctoral candidates make sense of defending their dissertations?* and *What do doctoral candidates' defense experiences reveal about their sense of being and becoming researchers?*

[28] According to the guidelines, it is optional for the chair to pose questions.
[29] According to the guidelines, the chair votes when a tie occurs.

5.4 Making Sense of Not-Knowing

The previous chapter presented how the individual participants demonstrated knowing and negotiated not-knowing in answering questions. To briefly summarize, for the questions whose answers they knew, they demonstrated their knowing in what they felt to be knowledgeable ways; for the questions whose answers they only knew partially or did not know, they evaluated the relevance and significance of the questions and provided either provisional or hedged answers. A comparison between each participant's pre- and post-defense descriptions of a successful defense revealed that seven participants provided different post-defense descriptions, including two more experienced researchers (Hank and Larry), three clinicians (Laura, Maria and Heather), one teacher-researcher (Bonnie), and the student-researcher (Patrick). In the post-defense descriptions, all these seven participants mentioned their attitudes toward not-knowing. For example, in the pre-defense interview, Hank described a successful defense in the following way:

> *I guess a successful defense performance is somebody who is able first to succinctly summarize the work that they've conducted and the conclusions that they have drawn from that work in their initial presentation; and then is able to respond to concerns about the types of work that they are doing…of academics and others who are coming from … a diverse set of backgrounds. (Hank, pre-defense interview)*

After the defense, Hank added the underlined part:

> *I guess somebody who is … articulate and calm and able to … convey confidence and … a good global understanding of the work they are doing; somebody who is*

> *able to address questions that are coming from a wide variety of angles. And I guess somebody who has got … the humility as well to … say where they don't understand or they are not equipped to answer that question. (Hank, post-defense interview)*

By using the word "*humility*," Hank was stressing the candidate's special status in the defense, which is someone knowing some things and yet not knowing everything. Laura expressed the same point of view by adding to her pre-defense description that a successful candidate would be "*able to … quietly accept it without being hard on yourself when you don't know an answer."* As well, while Maria focused on how she would defend her points by "*giv[ing] them some of my own ideas*" in her pre-defense description, she realized after the defense that

> *it will still be OK to say something like "No, I'm not clear with that theory or with that analysis" or something like that. I think a couple of times like that …would still be considered successful. (Maria, post-defense interview)*

Interestingly, while Patrick indicated in his pre-defense description that one did not need to answer questions that were "*beyond the scope of the study*", in his post-defense description he changed his answer to "*try[ing] to answer everything*" in order to "*show seriousness*" of the candidate. Patrick further explained that "*We don't have to be very scared of the questions that we may not know the answers [to] because …there will be many answers [many ways of answering them]*." Bonnie referred to the candidate's not-knowing by encouraging the candidate to think whether something was missing in answers to questions:

> *A successful defense performance should be … where you don't get upset with a question. And even if the same question comes back, just think on your feet, improvise and think "maybe something was missing" and just answer the question as best as you can. (Bonnie, post-defense interview)*

Heather mainly considered the knowing of the candidate in the pre-defense description, saying that "*An excellent defense would be … where people have a very good command of the literature …and when questions are being asked … they could … speak like 'in so and so's research this was said.'"* Whereas after having her own defense, Heather realized that the candidate may only be "*able to answer a fair number of the questions*" and that "*it is understandable if you can't answer all of them.*" In contrast, Larry felt his not-knowing in the defense was unacceptable and had hurt his self-esteem: "*[the defense] did not … go as a collegial scholarly discussion. It was more of challenging this not-yet-researcher."*

As shown above, not-knowing in the defense involved lots of emotions. For instance, Hank used the words "calm," "confidence," "humility"; Bonnie used "upset"; and Laura emphasized "*feeling good.*" Six participants seemed to be able to accept their not-knowing with ease, whereas Larry was the only one feeling disappointed and even angry. What colored his feeling was the set of questions that he did not answer well.

> *If you think of it as if it was a big basketball team, to have the initiation the new students have to … go through some kind of humiliation in front of all the other guys, and once they went through this humiliating step, they are part of the gang. The defense is …a humbling experience, where you will now be part of this*

fraternity of doctors, but before being part of this fraternity… you need to be able to be beaten up a bit. (Larry, post-defense interview)

These participants' different post-defense descriptions of a successful defense reflected how they made sense of not-knowing in the defense. The research revealed that, of those who explicitly expressed their views, most understood not-knowing as normal, acceptable, and part of what the defense represented. There was only one having difficulty accepting it. Considering the kinds of researchers as revealed in the previous chapter, Larry's slightly different reaction might be due to how he viewed himself in relation to the evaluation committee. While the majority felt they were less-than-peers of their evaluation committee—even Hank, the other relatively experienced researcher in the study, expressed the same view by talking about the "imposter syndrome"—Larry was the only one seeing himself as a complete peer of the evaluation committee. Compared to the previous literature suggesting that candidates' negative feelings were related to examiners' behaviors, this research revealed another factor that might also have an impact.

5.5 Defense as Confirmation of Researcher Identities

After the defense, seven of 11 participants (Bonnie, Maria, Max, Patrick, Laura, Hank, and Helen) indicated that their defense experiences—not only the successful outcome—served as a kind of confirmation of their researcher identities. For Bonnie, the defense confirmed her competence as a researcher, which was represented by knowing:

[The defense] confirmed me as a researcher because I realized I did conduct the study; I do understand my methodology, so it's preparing me to continue. And yeah it's a confirmation of how far I've come. (Bonnie, post-defense interview)

For Maria, the confirmation meant she had performed up to the expectations of her committee:

They [the committee] seemed happy from what I could perceive. They all … seemed to be satisfied with the answers that I was giving for the most part. There was like one or two times where I felt like maybe I wasn't giving them the full answer that they wanted but maybe just once or twice I felt that, but I think overall I met the requirement, like I met the standard of what they were looking for. (Maria, post-defense interview)

For Max and Patrick, the way that they were treated in the defense made them feel like a peer of the committee members:

I think that it was interesting—like the people that were there who are already researchers and professors actually had an interest in what I was doing and believed that it was valid. …What I got a feeling from is that they respected what I had to say and what I was doing. Kind of funny. I guess I felt… possibly as a researcher because other people were interested in what I was doing. …Like they were actually asking ME about stuff…. That was interesting. They looked at me like "What do YOU think?" as opposed to "I am asking you a question and I already know the answer and I just want to see if you know it" (Max, post-defense interview).

> *I mean they treated me like a researcher. OK, it's your research, so what do YOU think? But before [the defense] I have to discuss with my supervisor, and [she would say,] "You have to read this book that book" and I had to follow [her suggestions]. But during the defense I felt like they wanted to know MY idea, my OWN idea…. [and] I had to answer under the assumption that I AM a researcher—because I can't have any help from my supervisor…I am alone there on my own. (Patrick, post-defense interview)*

For Laura, the defense gave her a sense of being in the community of researchers:

> *They were so welcoming to me afterward. I mean that was like a dream. Like I can't believe how amazing that experience was. Like we had sherry up in the [Department] Chair's office and they took pictures and they hugged me and I felt very welcomed as a colleague. So it completely changes how I feel as a researcher, because… it kind of felt a little bit like I was being welcomed as a researcher. …like an initiation. Like I passed and now I am a colleague. (Laura, post-defense interview)*

Even for one of the more experienced researchers, Hank, the defense functioned as confirmation to a certain extent:

> *I hadn't done a test of … presenting my material to all of my committee in the past. That might be the circumstances of my committee or whatever, but it was the first time that I really had presented [the full study] to my … peers like this. So … there is … this fear that somebody would say, "No, this is actually not real*

> *scholarship or … this is not nearly sufficient to be a doctoral research" or something like this. And so when people come back and say, "Well, yeah, actually I thought it was really good and very interesting and a pleasure to read" and these things, that was nice." And then they engage with it … and ask some interesting questions and some challenging questions. So I was satisfied. (Hank, post-defense interview)*

For Helen, the confirmative role of the defense was symbolic. That is, the defense was the time when she finally was able to wear a pin bearing the title of *Doctor* before her name.

Of the remaining four participants, Martin and Heather did not feel strongly about this role of the defense. However, Martin admitted that the defense "*gave me some confidence that what I am doing is not that bad,"* and Heather said that the defense had provided her with ideas for future research. For Karen, a lack of challenging questions in the defense indicated the committee's recognition of her being a researcher before the defense rather than in it.

Again, the exception was Larry, who not only expected a successful outcome but also "an enriching experience":

> *My defense was not a failure…but I can't say that I am satisfied with the defense. I am satisfied with the outcome …. But … will I think my defense as an enriching experience or a good experience? My answer is no. (Larry, post-defense interview)*

So it seems that the confirmative role of the defense was only felt by the participants who did not view themselves as peers of the defense committee members. Larry, the most

experienced researcher in the group, did not expect the defense to confirm his researcher identity—since he had been relatively established in his field—and thus viewed it more as a formality. And when he was challenged, he interpreted this challenge as not treating him as a peer. I will talk more about this in the following section.

5.6 Defense Connecting Researchers' Past, Present, and Future

The data revealed that for eight of the 11 participants, the dissertation defense played a role in connecting their past, present, and future regarding the development of their researcher identities.

Hank, the relatively more experienced researcher in the group, described his supervisory relationship as a peer relationship:

> *[The internal examiner's name]… has been saying, "You are not somebody that I have to worry about. I know that you'll just go and do your thing and you'll do a good job and you can send me things when you want some feedback." So that's how he treated me for the whole way. And…when [Supervisor's name] became my supervisor after [my previous supervisor] left, …he knew that I would just do the work on my own and I didn't need him to … spend much time, hold my hand or anything like that. So … they have treated me that way through the whole process. (Hank, post-defense interview)*

Having been thought of and treated as an independent researcher throughout his doctoral study, Hank "*[didn't] feel intimated by [his defense committee] or lesser than*" them before going to his defense; and he understood that he was just expected to "*address questions that are coming from a wide variety of angles.*" The defense not only re-

validated his already recognized researcher identity, but also provided ideas for his future research: "*I think the most difficult [questions] are the ones that I take back with me and think about, OK, how can I fit this into my future research?"*

Heather developed research independence in conducting her dissertation project:

> *There were a lot of decisions that I had to make on my own, a lot of literature that I had to review and browse through and select and write up, so all of that has really broadened my horizons and has increased my knowledge about the area, which I think now is a strength. (Heather, pre-defense interview)*

This independence was also represented by her help-seeking abilities. She asked a leading scholar in her area to join her advisory committee and found someone outside of the university to help her with statistical analysis. Heather's independence developed during the process resulted in her confidence prior to the defense: "*I knew it inside out.*" Heather identified herself as a clinical researcher, and her daily work had a research portion in it: "*The job that I have is a combination*." The defense directly contributed to Heather's future research, which was inseparable from her clinical work in a hospital: "*There are all these significant differences [her research was a comparative study] but in terms of everyday clinical life, what is it really translating to?"* As well, completion of the defense and the award of the PhD meant more credibility for her career: "*To be able to do clinical practice you have to have a PhD*" and "*the [diagnostic] report signed by a PhD … would hold a lot of weight.*"

Laura's doctoral process was one where she, as a novice researcher, learned from mistakes. She realized that "*the biggest mistake I made was not thinking through my analytic strategy before I started*." Laura "*had a really hard time*" when using an

analytic strategy recommended by a member from her advisory committee and ended up giving it up after trying it "*for a long time*." Laura's learning continued in the defense, from which she identified questions that "*opened up [her] mind*" and questions for which she "*had to stop and think.*" For Laura, the defense was "*an initiation*" that marked her becoming "*a colleague … to other researchers.*" Laura's learning would continue after the defense, like what the chair said to her: "*You can never know everything in your field. All you can do is to be good at what you do and to listen very, very, very carefully*."

Maria began her PhD mainly to "*get licensed*" as a psychologist, yet the journey seemed to have given her more than a license. She was able to receive supervision from "one of the leading researchers" in her research area and managed to overcome various challenges in collecting data. When she finally completed the defense, she was happy to hear the external examiner's "*reassuring comments*" on her work, which "*made me feel … more competent … and more confident in my work.*" Maria would use some suggestions that she received in the defense in a paper for a journal. And in the hospital where she was working as a clinician, she had "*protected time to do research*", so "*some of the other questions … would just be for …the future."*

Bonnie had worked as a faculty lecturer for years before embarking on a PhD. She felt her researcher identity was "*not real yet*" while writing the dissertation:

> *when I was writing the dissertation, my colleagues would talk to me as though I were already a part of academy. They would say "Oh, Bonnie, you are doing what? And what are you drawing from? Your epistemology is what?" And then I would say XXX. And they [would say], "Oh yes" and they would talk about the*

ideas. But I would just think I am just playing with these words. (Bonnie, pre-defense interview)

Then when "*the PowerPoint [had] come up,*" Bonnie started feeling "*a shift in the way I perceive myself*" and found "*more of a comfort level*" with identifying herself as a researcher. For Bonnie, the preparation was "*a culmination of my standing up and … taking on the role [of researcher]*" and was what made her feel that "*[researcher] is part of me*." And the actual defense gave Bonnie "*confidence in myself as a researcher,*" which was represented by knowing: "*I know where to find information and how to find it.*" As for the future, the defense "*made [her] want to ask more questions*" and gave her "*points to consider*" for a few articles based on her dissertation.

Patrick distinguished "student" and "researcher" by defining the degree of independence involved in each concept. Patrick was a "student" when he began the journey, who did not know what "framework" meant. Gradually, he developed some research independence during the process through overcoming difficulties; for instance, he managed to complete his data analysis through reading. However, before the defense, he still made decisions regarding his research project by consulting his supervisory committee: *"'I-think' meant my supervisor also agreed, my committee agreed, someone else agreed."* The defense was where Patrick started to perform a more independent researcher self: "*I can't have any help from my supervisor because I am alone there on my own.*" Patrick felt that he got some new ideas from the questioning, which would help his follow-up study.

Max's researcher identity was inseparable from his teacher and administer identities, given that his dissertation project was part of a larger project that was going on

in his school. It seemed that there was a research portion in his daily work: "*I am a former teacher and I am an administrator so we look at a lot of data all the time and try to make decisions based on that*." Max believed his teacher and administer identities complemented his researcher identity because he was able to implement research findings. The only moment when his teacher/administer identities conflicted with his researcher identity was when he had to take off "*a week or two just to work and research*" in completing his dissertation. Max did not view the defense as having a shifting power, yet he was happy to be treated as a somewhat equal in the questioning session: "*Like they were actually asking ME about stuff… as opposed to I am asking you a question and I already know the answer and I just want to see if you know it*." Also, Max saw the defense as a critical review of what he had done and thus would help his future work on the project:

> *[The project] has taken 4 years and it is 3 years of data collection, so I've spent a lot of time and I have invested a lot of energy in it. And I think having outside eyes look at it and question it or critique it or make me defend it … is probably going to remind me when I am a researcher or when I am doing something similar later … that I really need to consider what other people's questions might or I might really need to look at conclusions that I'll be basing them on. (Max, pre-defense interview)*

Helen had a difficult PhD journey in that she transferred to the university from somewhere else, was informed of the failure of her dissertation after she had found an academic position, and had to find a new supervisor in order to submit a second dissertation. The failure had a tremendous influence on Helen's prospects about her

academic career: "*Within the first week or two … my biggest fear was that this failure would define my academic identity … that I would be forever known as a person whose thesis failed."* For Helen, the completion of the defense symbolized her winning of this battle. When she finally put on a pin bearing a "Dr." before her name in the defense room, only she knew how much this pin "*embodie[d] the struggle"*: "*I am going to wear it everyday at work and I'm going to wear it for a long time.*"

For Karen, the defense was "*an opportunity to bury the hatchet and move on."* Karen had to defend her dissertation before a deadline in order to secure her post-doctoral fellowship. Hence completing the defense was a way for her to put the past behind and move to a hopefully positive future as a post-doctoral fellow.

For Martin and Larry, the defense did not seem to play a strong role in connecting their past, present, and future. Instead, it seemed to only mean completion of a degree. Coming from industry and working in academia in a different field from education, Martin "*[didn't] find [a] strong connection between [his research] and practice*." Martin had learned how to do research through doing a PhD, yet in the end he realized that"*[doing research] is not something that really motivates me that much.*" Larry had over 10 years of research experience and viewed himself as an established researcher in his area. He saw himself as a peer of the defense committee and expected them to treat him as such in the defense. So when the external member asked a set of questions that he was not able to answer, he interpreted it as meaning that his researcher status was challenged and questioned.

On the whole, the defense connected the participants' past, present, and future, in different ways, regarding the development of their researcher identities. For Hank and Heather, the defense was a reward to their independence in the process; for Laura and

Maria, the defense reflected the outcome of their learning in becoming researchers; for Bonnie and Patrick, the defense was more or less a shifting point for their self views about their researcher identities; for Max, the defense connected his researcher identities and other identities; for Helen, the defense was the last hurdle in her academic career; and for Karen, it was a way to disconnect from the past and move to the future. This research revealed that for the majority of the participants, the defense wove their past and future into the present, and was an important venue for them to reflect on being/becoming researchers.

In summary, this chapter has reported on six cross-case themes that address the three research questions. Regarding doctoral candidates' experiences of defending their dissertations, the research has revealed that for the majority of the participants, the defense was prepared as an exam yet was experienced as less than an exam. In the defense, the participating candidates were asked of more questions regarding the research process and *doctorateness*; and they performed as researchers who were navigating across research fields/areas, methodologies, and epistemologies. Regarding how they made sense of defending the dissertation, most participants interpreted their not-knowing as normal and acceptable; and how they made sense of their defense experiences seemed to be influenced by how they viewed themselves as researchers: while most of the participants viewed themselves as less-than-peers of the evaluation committee and thus took not-knowing as normal, the one who viewed himself as a peer had difficulty accepting it. Finally, regarding the relationship between the dissertation defense and doctoral candidates' researcher identities, most of the participants considered the defense as confirmation of their researcher identities, and the dissertation defense played a role of

connecting these participants' past, present, and future—albeit in different ways—in terms of their researcher identity development.

CHAPTER 6: DISCUSSION AND CONCLUSIONS

> *Being confronted by a group of professors who have gathered together for a candidate's sake and who devote to him or her their full attention for one or two hours is an experience one never forgets, even in its smallest details. (Schmidt, 1985, p. 140)*

This research explored 11 doctoral candidates' experiences of defending their dissertations publicly in order to address the facts that there is no empirical literature about the public dissertation defense and that there is little documentation of doctoral candidates' defense experiences. Given that producing researchers is an important goal of PhD education, this research particularly focused on how the public dissertation defense was related to the development of the participating doctoral candidates' researcher identities. The perspective on identity was mainly drawn from the theory of communities of practice (Lave & Wenger, 1991; Wenger, 1998). That is, doctoral students develop researcher identities continuously during doctoral studies through participating in research practice. Through this participation, doctoral students gradually acquire competence in doing research and become members in the community of researchers in their fields of specialization. The research was designed as a qualitative multi-case study in order to capture the variety of doctoral candidates' experiences and to enhance the generalizability of the results. The 11 participants came from three departments of the Faculty of Education at a Canadian research-intensive university. The data were composed of several kinds: pre- and post-defense interviews with the doctoral candidates, observation and field notes from the defenses, institutional guidelines about the

evaluation of the PhD dissertation and the oral examination, and demographic questionnaires.

Chapter 4 presented the findings by individual cases and Chapter 5 presented cross-case themes. This chapter makes conceptual links between important findings and draws conclusions from the study. I begin by addressing how the perspective employed in the study (the defense experience in relation to doctoral candidates' researcher identities) has provided new insights into an old event, the dissertation defense. I continue with a discussion about important findings that help interpret doctoral candidates' defense experiences. I then discuss what the findings have revealed about the nature of the public PhD dissertation defense. After a brief section about the contributions of the study, I make recommendations for practice, identify the limitations of the study, and suggest future research directions.

6.1 Re-Visiting the Theoretical Framework

Doctoral learning and doctoral students' identity development are inseparable (Golde, Walker, & Associates, 2006; Green, 2005; L. Hall, A. & Burns, 2009; Kamler & Thomson, 2008), and producing competent researchers is an important goal of PhD education (Council of Australian Deans and Directors of Graduate Studies (DDOGS), 2008; Council of Ministers of Education Canada, 2007; Joint Quality Initiative, 2004; Park, 2007). While recent years have seen a growing body of literature exploring how doctoral students construct identities from day to day experiences, little has been written about how identities might be related to the milestone events in the doctoral process, such as the final dissertation defense. Documenting these experiences is important because

even though the defense procedure may be observable, how students make sense of it is not.

This research documented doctoral candidates' defense experiences by looking at how they performed researcher selves in the dissertation defense and how this experience was connected to their past and future views of themselves as researchers. The perspective on doctoral students' researcher identities was mainly drawn from the identity component of the communities of practice theory (Lave & Wenger, 1991; Wenger, 1998). Based on this theory, identity is defined by *membership*, which is represented by one's competence or *knowing*. Doctoral students are relatively newcomers in the community of their fields of research and they are expected to demonstrate competence/knowing in the dissertation defense. Also, identity is defined by *meanings* that one makes in participating in activities in a community of practice. Identity development is considered to form a *trajectory*, which has a past, present, and future. Finally, identity construction is a process involving how one thinks about oneself, how one performs, and how one is thought of by others as a certain kind of person (Tonso, 2006). These perspectives on doctoral candidates' researcher identities constructed the theoretical framework for understanding doctoral candidates' performances in the dissertation defense.

Wenger (1998) argues that competence/knowing can only be recognized by those within the relevant community and that what distinguishes newcomers from old timers is less competence. This research seems to have shown that this is only partially applicable in the context of the dissertation defense, mainly because the evaluating panel is composed of people from outside as well as from inside the candidate's field of research. While not being able to provide answers or providing tentative/incomplete answers to insiders' questions may be evidence for doctoral candidates' newcomer status in the

community of researchers in their fields, not knowing answers to outsiders' questions is not necessarily evidence for their incompetence. Larry probably did not realize this and as a result, he felt his competence was questioned. Handley, Sturdy, Fincham, and Timothy (2006) and Fuller (2007) pointed out that newcomers bring in knowledge from outside and thus "new" and "old" in a community are relative concepts. This research has yielded some examples to support this point of view. For example, some participants, especially the teachers-researchers group, brought in their teaching experiences in addressing some questions in the defense. In this case, although the candidates might be newcomers in terms of their research competence, they had expertise in their research topics built on other experiences. It would appear that at least in these instances, all within applied fields, drawing on professional experience was considered an appropriate strategy.

Meaning in this research referred to how doctoral candidates made sense of the experience of defending their dissertations. It is an important tool to document doctoral candidates' own perspectives on the dissertation defense, which has not been effectively documented in previous research literature or how-to guides. In this research, the participants' meaning-making of their overall defense experiences, and specifically of not-knowing in responding to questions, revealed their sense of being/becoming researchers. The fact that most of the participants viewed the defense as confirmation of their researcher identities indicates that the majority of the participants saw themselves as new members in the community of researchers in their fields. This is consistent with another finding that most of the participants perceived not-knowing as acceptable and believed that it would not affect their being recognized as competent researchers by the defense committee. Note that these findings linked the three aspects of identity proposed by Tonso (2006). That is, the participants' meaning-making of their defense

performances revealed how they *thought about themselves as* researchers and their concerns about how they would *be thought of as* researchers by the defense committee. What the research suggested was that those who viewed themselves as less than peers of their committees—the majority of the participants—accepted more easily the gaps in their knowledge and felt their research competence had been recognized by the defense committees. This contrasted with those who perceived themselves as more experienced, since not-knowing seemed some kind of denial of research competence and a lack of recognition of his researcher self by the committee.

The temporality of identity development, or the concept of identity trajectory, is represented by the finding that the dissertation defense wove together the participants' past, present and future in terms of their development as researchers. Specifically, the participating candidates' prior experiences (research experience as well as other experience that impacted on the dissertation research) had an influence on their defense experience and on how they made sense of it; and these candidates' defense experience also had an influence, in various ways, on their future (research) careers. So the concept of *trajectory* places the dissertation defense in a meaningful context of the doctoral candidate's development as a researcher, which previous studies have all failed to do.

In conclusion, the identity framework used in this research helps address two gaps in the literature. Firstly, while some researchers promoted the developing role of the dissertation defense (B. Carter & Whittaker, 2009; Tinkler & Jackson, 2004a), no research has looked into how this role may be fulfilled. The identity framework employed in this research allows for explorations of how the dissertation defense develops doctoral candidates' researcher identities, especially through the concepts of *membership*, *meaning*, and the three aspects of identity construction (*thinking about oneself*,

performing, and being thought of as a certain kind of person). Also, the previous literature studied the dissertation defense largely as a lone event, and the identity framework helps contextualize it, especially through the concept of *trajectory* and multiple *communities*. Overall, this perspective helps the documentation of doctoral candidate's experiences of defending their dissertations by providing new insights into an old exam that has likely existed since the Middle Ages (Fraser & Rowarth, 2007). And this perspective may also apply to studies based in other contexts about doctoral candidates' defense experiences since identity is a product and byproduct of doctoral education (Green, 2005).

6.2 Interpreting Doctoral Candidates' Defense Experiences: The System and Individual Trajectories

This section discusses several important findings regarding the participants' defense experiences (their feelings, their navigating across borders in answering questions, and their sense-making of not-knowing), and argues that doctoral candidates' defense experiences may be interpreted by examining individual trajectories as well as the system.

While some earlier research in the U.K. reported that nearly half of successful candidates had negative feelings about their defense experiences (Hartley & Jory, 2000), this research found most of the participants (9 out of 11) had positive feelings. Other research, also in the U.K., suggested that students' negative feelings were largely due to discrepancies between their expectations and actual experiences, which further was a result of a lack of transparency of the private defense system (Wallace & Marsh, 2001). Compared to students' preparation experiences in the U.K., where they may only consult

their supervisors and those who have defended (Tinkler & Jackson, 2002) and thus have all kinds of misconceptions about the defense (Murray, 2003b; Wellington, 2010); the majority of the candidates in this research had observed at least one defense and attended one dry-run (where they rehearsed their presentation and in some cases responding to questions) before going to their own and thus had a much better understanding about what their defense would be like. In a word, the open defense system contributed to these participants' preparations and their actual defense performances.

Yet this study also found somewhat negative feelings held by two participants, with one of them having observed over 10 defenses before having her own. For these participants, the research seemed to suggest that individual trajectories shaped these candidates' expectations for the defense. The one who had attended many defenses was disappointed at the lack of challenging questions in her defense and interpreted this as her committee's leniency due to her failure of the first dissertation; whereas the other participant was upset about the challenging questions in his defense and interpreted this as the committee's questioning of his established researcher identity in his field. Hence, doctoral candidates' interpretations of their defense experiences were influenced by not only the degree of openness of the examination system but also their individual trajectories. This somewhat echoes Crossouard (2011), who related doctoral candidates' defense experiences to their past exam experiences.

Another finding was that the participants navigated across disciplinary, methodological and epistemological borders in order to answer questions. This can also be explained by the system and individual trajectories. Compared to the private defense system, the public defense system uses a panel of scholars coming from various research areas (although generally in the candidate's discipline) instead of two examiners both

coming from the candidate's research area. In this research, the participants evaluated the relevance and significance of the questions and identified some as being irrelevant or lay questions. In providing answers, most of the participants, especially the practitioners, used their professional knowledge acquired from the past. In this sense, doctoral candidates' performances in the dissertation defense are shaped by both the system and their individual trajectories as well.

This research has found "not-knowing" to be a component of successful defense performances. The link between "not-knowing" and successful defenses is not apparent in the literature or how-to guides, where knowing, rather than not-knowing, is what has often been stressed. The strategies for handling not-knowing are even less mentioned in the literature (except Recski, 2005). So it is not surprising that after their defenses over half of the participants added responding effectively to "not-knowing" to their descriptions of successful defenses. Doctoral candidates' not-knowing may be partially explained by the system, that is, by the various perspectives of the committee members. But how they made sense of not-knowing was more related to individual trajectories. Evidence in the research was that those viewing themselves as less-than- peers of the committee tended to accept not-knowing more easily.

In summary, while the previous research tended to turn to the system for interpretation of doctoral candidates' defense experiences (Hartley & Jory, 2000; Wallace, 2003; Wallace & Marsh, 2001), this research has directed more attention to individual trajectories, which has the potential to explain different feelings of doctoral candidates.

6.3 Understanding the Public PhD Dissertation Defense: A Researcher-Developing and Gate-Keeping Trans-Community Conversation

This study has yielded findings that point to the nature of the public dissertation defense. This section discusses these findings by comparing them to those in the literature in order to provide some insights beyond the descriptions in how-to guides.

First of all, this research has revealed complexity regarding the nature of the public PhD dissertation defense, as represented by the discrepancies between the institution's conceptualization, the local practice at the faculty level, and the participants' perceptions. These findings suggest that although the public defense appears more transparent than the private viva, similar controversies exist regarding to what extent it is a rigorous examination (Jackson & Tinkler, 2001; Powell & McCauley, 2002). The dominance of D questions in general and particularly in 7 of the 11 defenses seems to indicate that gate-keeping remains as a purpose. In this sense, the public defense is still an exam. On the other hand, while researchers studying the private viva believe that the viva develops doctoral candidates as well as examining them (Tinkler & Jackson, 2004), this research has provided more evidence supporting the developmental role of the public dissertation defense. The nearly equal dominance of C questions (about the research process) differs from what was reported in Trafford' and Leshem's (2003, 2008) studies, which revealed that more D questions were asked in successful vivas[30]. As C questions "demonstrate understanding of research as a process and an ability to undertake complex research in a critical and appropriate manner" (Trafford & Leshem, 2008, p. 19), they in nature are related to the development of the candidate as a researcher. Additional

[30] Successful vivas in their research refer to those with the outcomes being pass and pass with minor or very minor changes. Depending on the viva, they found that 37-69% of questions in successful vivas were D questions; and D questions were more than questions in any of the other three categories.

evidence for the importance of the developmental role is that few of the 11 defenses directly led to revisions to the written documents; rather, they provided the participants with ideas and thoughts for their future research; or in the cases where the participants would not do research in the future, the defense was an opportunity for them to learn from the research process. Thus, developing the candidate stands out in this study as a purpose of the public PhD dissertation defense.

Murray (2003a) argues that the private viva should be viewed as a new communication event in which the candidate returns to a novice status "not in their field but in this form of examination" (p.111). By "form," Murray meant the new perspectives on the dissertation brought in by the two examiners. This research has revealed that the public dissertation defense may also be considered as a new communication event, given the various perspectives brought in by the committee members and doctoral candidates' navigation across borders in addressing them. Further, Jackson and Tinkler (2000) noted that doctoral examination linked three scholarly communities (the institutional community, the community of professional academics, and knowledge community). All these communities are relevant to the public dissertation defense as well, since the chair represents the university community, the external examiner represents the knowledge community, and the other members on the defense committee represent the departmental and faculty communities. This research, however, has gone one more step by offering concrete examples of how the oral defense may involve these communities (i.e., what questions were asked and how they were handled). Moreover, while the three communities identified by Jackson and Tinkler (2000) are all within academia, this research has identified communities beyond academia that may also be relevant to the dissertation defense, such as professional communities that doctoral candidates come

from and will go back to. In a word, this research suggests that the public dissertation defense is a new communication event and has the potential to connect multiple academic and non-academic communities.

In summary, the public PhD dissertation defense may be conceptualized as a trans-community conversation that aims to develop doctoral candidates as well as examining them.

6.4 Contributions of the Study

This research documented doctoral candidates' experiences in the public dissertation defense, which had not been documented before. Particularly, it focused on doctoral candidates' perspectives and voices, which how-to guides have failed to address. It is the first study of its kind in North America.

This study employed a new perspective to study an old event and thus has provided new insights. This perspective is coherent with the goal of PhD education (to produce competent researchers) and contextualizes the dissertation defense in individual doctoral candidates' developing trajectories as researchers. This is in sharp contrast with the previous research, which tends to isolate the dissertation defense from the doctoral process and doctoral candidates' development.

The methodology of this study is also a contribution because none of the previous researchers[31] collected data beginning with doctoral candidates' preparations through their performances in the defense to their post-defense reflections. Also, the multi-case studies design is helpful in capturing the variety of doctoral students' defense experiences and allows for a close examination of how they make sense of their defense experiences.

[31] Tinkler and Jackson did pre-defense interviews and post-defense interviews but they did not observe their participants' performances, which is impossible to do in the U.K.

6.5 Implications for Practice

This study has provided insights into how a group of doctoral candidates made sense of their public dissertation defense experiences beyond how-to guides and anecdotal stories. It thus has implications for doctoral students, academics, and higher education institutions.

First of all, this research has suggested that the defense connects doctoral candidates' past, present and future, and is a venue for them to demonstrate and reflect on their researcher identities. Hence, a direct implication is that the preparation for the defense is long-term rather than short-time. It starts the first day of the PhD (or even earlier) rather than a few weeks prior to the scheduled date. Specifically regarding doctoral progress, the research process is important and students should take every step seriously and know all why's and how's. The following quote from Trafford and Leshem (2008) is worth reading:

- If the scholarly merit of the thesis determines the outcome of the viva—then producing a thesis that is based on explicit scholarship is your preparation for the viva.
- If your supervisor(s) constantly ask [sic] the Kipling[32] questions to challenge you and foster your intellectual development—then answering questions, defending points of view and engaging with scholastic ideas and their applications is your preparation for the viva.

[32] Rudyard Kipling (1865-1936) was a British author, who was famous for his tales for children. In *The Elephant's Child*, Kipling wrote, "I keep six honest serving-men/They taught me all I knew/Their names are What and Why and When/And How and Where and Who" (Trafford & Leshem, 2008). Here, Trafford and Leshem refer to all questions beginning with these words about doctoral research.

- If undertaking constructive review of the thesis can reinforce understanding of its cohesiveness and synergy—then achieving deep understanding of research as an integrated process is your preparation for the viva.
- If critical re-reading of the text of thesis [sic] strengthens its arguments and improves its presentation—then auditing the thesis for meaning, clarity, and presentation is your preparation for the viva. (p. 192)

As for the short-term preparation, students should be aware that since the committee members come from various areas and thus look at the dissertation from various perspectives, it is normal to encounter questions that are not relevant, out of the scope of the study, or difficult to answer; and that not being able to answer a few questions is part of a successful defense. Also, this research has shown that although not-knowing in the questioning session may not influence the outcome of one's defense, it may lead to hard feelings. So students should make emotional preparations as well as intellectual ones. Moreover, handling not-knowing and the related emotions is an important skill for doctoral candidates. Some strategies employed by the participants in this study may be helpful, such as evaluating the significance and relevance of questions before answering, providing provisional/hedged answers, and improvising based on knowledge about one's research, and using knowledge from various sources.

Further, although the defense may appear to be less formal than one might conceive an exam to be, students still need to prepare carefully for two types of questions: those about the practice of the research and those demonstrating doctorateness. In other words, it is worthwhile to review how decisions were made during the research process

and why, and to keep in mind that you are expected to demonstrate that you are up to the standards of the degree.

As regards academics, since the supervisor has been found to be the most important source of information in students' preparation, the supervisor should convey to the candidate the nature of the defense and remind him/her of emotional preparations. For other members on the defense committee, it might be useful to think about how questions might help develop the candidate as a future researcher, as this was found to be a very important purpose of the public dissertation defense.

Finally, this research has suggested that at this particular university, the institutional guidelines do not seem to be that helpful for students' preparation. Specifically, expectations regarding the candidate performances are largely missing in the document. So I would suggest that if applicable, all universities provide details in their guidelines regarding the expectations for doctoral candidates' defense performance.

6.6 Limitations and Future Research

This research was limited in data sources, sampling, and data collection methods. At the university where this research was conducted, audio-recording of dissertation defenses is strictly prohibited. As a result, the on-site interactions between the participating candidates and their evaluation committees were not collected aside from my research notes. I hand-wrote all questions (for some, answers), and in the post-defense interviews, I asked the candidates to verify them; for those identified as difficult/challenging, I asked the candidates to repeat their answers in the defense and to reflect on them. Yet still the on-site interactions would have made the research more robust, given that I would have all answers to questions and thus had a more complete

picture of the interaction. Swales (2004) used three recorded PhD dissertation defenses in his research; so if possible, I would suggest future researchers audio-record defenses.

Secondly, I did not interview the academics on the 11 defense committees, and as a result, their perspectives were missing. Future research may include their perspectives to enable more triangulation as to the interpretation of the candidate experience.

Thirdly, due to time constraints, I only started collecting data when all participants' defenses had been scheduled, and all data about their experiences during their research process were retrospective in nature. Given that the defense is part of the doctoral process, an ideal design would be a longitudinal study starting after students' completion of the comprehensive exam, since literature has suggested that this period is when doctoral students start learning to be independent (Baker & Pifer, 2011).

Lastly, the sampling strategy in the research has resulted in limited generalizability of the findings. The 11 participants in this research were not selected by maximizing their variations in demographics but by accessibility (Stake, 2006); and the gender ratio did not represent well that of the graduates of the data collection period in the faculty. Also, this study only looked at a single faculty at a single university, whereas the literature has suggested that defenses are conducted differently across countries, universities and disciplines. Hence, due to the sampling strategy many findings may not be generalizable to other contexts. However, I do believe in what Stake called "naturalistic generalizations," which are "arrived at by recognizing the similarities of objects and issues in and out of context and by sensing the natural covariations of happening" (Stake, 2000, p. 22). And I have tried my best in writing this study to provide as much detail as possible so that readers can make their own generalizations.

Following this chapter is a short postscript about my reflections on conducting this project.

POSTSCRIPT: REFLECTIONS

> *When you reach your destination [in the doctoral journey], you are different. The changes that occur are ontological as well as epistemological. They are changes in "who you are" as well as "what you know"* (Batchelor & Di Napoli, 2006, pp. 13-14).

What makes qualitative research qualitative is its foregrounding of the relationship between the researcher and the researched (Denzin & Lincoln, 2008). In Chapter 1, I talked about how I became interested in the topic, and in Chapter 3, I described how my own identity and perspectives influenced the conduct of the research. In this short postscript, I briefly summarize my learning from doing this research.

When the data collection started, I only knew two of the participants personally. Yet at this time I feel like I know them all: I know where they came from, what they have been doing, and where they might be going. I have learned a lot from their experiences. For example, from Laura, I have learned how to negotiate one's research interests with one's committee members; from Heather and Patrick, I have learned independence during the journey; and from Helen and Karen, I have learned strong-mindedness and perseverance. Surely I haven't experienced what many of them have experienced in my own doctoral journey, but I do consider their experiences as invaluable sources of knowledge for me to consult when I become a supervisor in the future. As for their views regarding doing academic research and being researchers, some of them resonate with me and some do not at the moment. But I feel I will carry them all with me so that I can test them later.

Doing this research has certainly helped my own preparation for the dissertation defense. For example, as a student who speaks English as a foreign language, I will, like Patrick, practice my presentation over and over again. And I know there will be questions from various perspectives and there will be ones that I have difficulty answering. I will be emotionally prepared for this and will use all kinds of strategies that I have learned from the participants. On the other hand, I believe that my own defense will be different from theirs, since my personal trajectory is unique.

Conducting this project and communicating with the participants have helped my personal growth as a researcher. I did not have a strong sense of belonging to any community of practice when I embarked on this journey. Yet when presenting findings of this project at conferences, I was asked of interesting questions and provided with useful feedback. Recently, a professor that I knew at a conference asked if I would be willing to conduct some research with her about dissertation defenses, and another professor doing research in dissertation evaluations kindly offered feedback on a manuscript that I am preparing based on this project. This echoes Maria's experience of finding a co-supervisor and Heather's experience of finding a committee member at conferences. Making sense of these experiences of mine, I would say that I am being viewed by others as a researcher, although I am not confident about my research competence myself. Looking ahead, I wonder how I will perform my researcher self in my dissertation defense (and thus a post-defense postscript will be added to this section). Looking even further, I am eager to continue on my research journey after the defense.

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I researched on oral defenses, had attended nearly 40 before having my own, and had been looking forward to analyzing my defense experience. Yet I was nervous, like all

my participants, when standing in front of my defense committee. I encountered questions that were challenging and difficult and I did not answer them very well. In this sense, the research did not seem to have helped me as much as one might have thought. And this seems to have confirmed that each defense is unique.

I was questioned for 65 minutes and was asked of 18 questions in total. Corresponding to the findings of this research, 11 questions fell in Category D (demonstrating doctorateness), six fell in Category C (practice of research), and one fell in Category B (theoretical perspectives). Hence like the 11 defenses, my defense also attended mainly to the doctoral standards (and was thus gate-keeping) and the research process (and thus had the developmental function of making me a better researcher).

In answering the questions, I performed a researcher self by balancing my knowing and not-knowing. And I was very well aware of doing so. For example, at the very first question (how do you situate your theoretical framework in the theoretical literature?), I conveyed to the professor that I knew about the theories that had been mentioned in the dissertation (knowing); at the same time, I admitted that I did not do thorough research into them (not-knowing). Thinking that I would hopefully explore further these theories and become a more knowledgeable researcher in my post-doctorate years, I had little difficulty accepting my not-knowing.

I did not feel as strongly that the defense per se confirmed my researcher identity. I figure this is primarily because the defense made me realize more clearly what I do not know instead of what I know. To me the confirmation lies more in the external examiner's requests as she expressed in the evaluation report: "*I would be delighted to know the actual answers to [my] questions. … I request… to have a soft bound copy of the dissertation … for my future reference.*" I feel that my research has been taken

seriously by an expert in my field and that I have been recognized as someone who has made a contribution.

I started my doctoral journey as a non-researcher who had been attracted to the research world by the beauty of “looking for research-based evidence” for practice. Looking back, I feel more and more strongly how little I have done and how much more I want to do. A week following my successful defense, I am still not used to being called Dr. Chen, but hopefully I will be in the near future.

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APPENDIX A: DATA COLLECTION INSTRUMENTS

1. Invitation Email
2. Demographic Information Form
3. Pre-Defense Interview Guide
4. Post-Defense Interview Guide
5. Field Notes Protocol

Invitation Email

Your oral defense experience matters: An invitation

Hi _____,

My name is Shuhua Chen, and I am a PhD student in the Department of Integrated Studies in Education, McGill University. I am collecting data for my dissertation research on doctoral students' experiences of the final oral defense, and I am writing to ask if you are interested in participating.

Your experience matters – very much! In Canada and the U.S.A., although an overwhelming majority of PhD programs require an oral defense of a written dissertation, there is little empirical research on this exam. And, there is no research on student experiences, although students are the central figures in the event! Your sharing of your experience will be an invaluable contribution to the literature, and will be of great help for doctoral students, supervisors, and defense examiners.

If you agree to participate, you will be interviewed twice. The first interview will take place during your preparation period for your defense (approximately a few days before your defense, or at your convenience), and I will ask you some questions about your understanding about the doctoral oral examination. The second interview will take place after your defense (approximately a couple of days following the event, or at your convenience), and I will ask you to talk about your defense experience. You may find more information about participation in the attached **consent form**.

To thank you, after the pre-defense interview, I will give you some "tips" collected from my reading of advice books that will help your preparation for your defense. After the post-defense interview, I will send you some resources (links and websites) that may help your academic career.

I look forward to receiving your supportive response. For questions and concerns, please feel free to contact me by email at shuhua.chen@mail.mcgill.ca Thank you.

Sincerely,

Shuhua Chen (PhD candidate)
Department of Integrated Studies in Education, Faculty of Education, McGill University

Demographic Information Form

Instructions: To fill out this form, write directly in the gray space or click your mouse to check a box. Please email your completed form to shuhua.chen@mail.mcgill.ca. Thank you!

Anonymity and confidentiality are a very important part of this research. Any information that may reveal your identity will NOT appear in any report of any form. This form will be stored in safeguarded conditions.

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1. Last Name First Name Sex
2. Age group: ☐26-30 ☐31-35 ☐36-40 ☐41-45 ☐over 45
3. Mother Tongue: ☐English ☐French ☐Other (please specify)
4. Status in Canada: ☐Canadian citizen ☐Permanent Resident
   ☐International Student ☐Other (specify)
5. Year you started the program: (e.g., 2004)
6. ☐PhD ☐Ad Hoc PhD
7. Department:
8. Area of Study: (e.g., curriculum studies)
9. Name of your supervisor:
10. Month and Year you passed your *comprehensive exam*: (e.g., April 2004)
11. Month and Year your research *proposal* was approved: (e.g., April 2004)
12. Month and Year you submitted your dissertation: (e.g., April 2004)

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13. In the space to the left of each item below, please **rank** order *the three most important reasons* that led you to do a PhD with **'1' being most important and '3' being least important** of the three reasons.

    I needed a doctorate to enter into or advance in my field.
    I wanted to change my field of study.
    I could not find a job, so I decided to go back to school.
    A faculty member recommended I pursue a doctorate.
    I wanted to increase my knowledge in my field of study.
    I wanted to pursue personal intellectual interests.
    I wanted to earn more money and expect my earnings will increase with a doctorate
    Other – please specify

14. Before entering doctoral studies, what degree(s) did you obtain?
    ☐ Master's level degree in (area).
    What type? (e.g., M.A., M.Ed. etc.)
    ☐ Bachelor's level degree in (area).
    What type? (e.g. B.A.; B.Sc.)
    ☐ Other degree or training in:
15. Are you holding a position now? Yes ☐ No ☐
    What type of position(s)?
    ☐ Faculty at college or comprehensive university: Full-time ☐ Part-time ☐
    ☐ Faculty at research-intensive university: Full-time ☐ Part-time ☐
    ☐ Further training or study (e.g. post-doc)
    ☐ Researcher in the private sector: Full-time ☐ Part-time ☐
    ☐ Researcher in government: Full-time ☐ Part-time ☐
    ☐ Administrator in a college or university: Full-time ☐ Part-time ☐
    ☐ Teacher/ administrator at elementary or secondary level:
    Full-time ☐ Part-time ☐
    ☐ Administrator or manager in the private sector: Full-time ☐ Part-time ☐
    ☐ Administrator or manager in government: Full-time ☐ Part-time ☐
    ☐ Professional (self-employed or in an agency): Full-time ☐ Part-time ☐
    ☐ Do not plan to work or study
    ☐ Other (please specify)

16. If you plan to search for a position, what type of position do you hope to hold?
    Full-time ☐ Part-time ☐
    ☐ Faculty at college or comprehensive university
    ☐ Faculty at research-intensive university
    ☐ Further training or study, e.g. post-doc
    ☐ Researcher in the private sector
    ☐ Researcher in government
    ☐ Administrator in a college or university
    ☐ Teacher/ administrator at elementary or secondary level
    ☐ Administrator or manager in the private sector
    ☐ Administrator or manager in government
    ☐ Professional (self-employed or in an agency)
    ☐ Do not plan to work or study
    ☐ Other (please specify)

17. Do you have any presentations or publications? Yes ☐ No ☐
    If Yes,
    a) Number of <u>presentations</u> beyond those given in your Faculty:
    (peer reviewed) (not peer reviewed)

    b) Number of <u>publications</u>:
    (peer reviewed) (not peer reviewed)

18. Other comments or remarks:

Pre-Defense Interview Guide

DEFENSE

1. Tell me about your preparation for the defense.
2. What are your sources of information about the defense?
   - Supervisor(s), peers, other people; other defenses; documents, website
   - How have you found them helpful?
   - Which source seems to be the most helpful?
3. What do you think is the purpose of the dissertation defense?
   - What does it examine?
4. What do you think your defense committee (examiners) expect of you in the defense?
5. What questions do you think would be difficult or challenging for you to answer in the defense?
6. Could you describe or characterize a successful defense performance? What's it like?
7. What were some of the difficulties or challenges in carrying out your dissertation project? (conceptualizing, designing, field work)
   - How were they solved?

RESEARCHER

8. What does being a researcher mean to you?
9. To what extent do you feel like a researcher?
10. What do you see as your strengths and weaknesses as a researcher?

11. Is there anything you want to add?

Set up a time for post-defense interview!

Post-Defense Interview Guide

1. How would you describe your defense experience?
2. What do you most remember about your defense?
3. What (types of) questions were easy/relatively easy for you to answer? How did you handle it/them?
4. What (types of) questions were challenging or difficult? How did you handle it/them?
5. What (types of) questions gave you surprises? Why?
6. What (types of) questions had you already dealt with in the process of conducting your research?
7. **[<u>Based on observation</u>]** In the defense, Prof. X asked you Question Y,

   (a) Why do you think s/he asked this question?
   (b) How well do you feel you answered it?
   (c) If you could answer it again, how would your answer be different? Why?

8. In what way have questions and discussion in your defense furthered your thoughts on your research topic/area?
9. What did you want to achieve through your presentation? Were you satisfied with your performance?
10. To what extent do you think your performance in the defense met the examiners' expectations?
11. If you could do your defense again, how would you do it differently?
12. (a) What kinds of revisions, if any, were you asked to make?
    (b) How are you going to respond?
    (c) What did your supervisor counsel/advise? Why?
13. (a) Imagine you are giving advice to someone who will be defending shortly, what would you tell them?
    (b) Imagine also someone who is a year or more away, in what ways might your advice differ?
14. In the last interview, I asked you to characterize a successful defense performance. Having gone through it, how would you now characterize a successful defense performance?
15. To what extent has your defense experience influenced the way in which you feel like a researcher?

Field Notes Protocol

1. Observation notes taken during the defense
   (Collect a defense poster in the building)

   A. Physical setting
   - Number of committee members (incl. Defense Chair):
   - Number of audience (excl. me):
   - Seating (draw below)

   B. Defense
   - Pre-defense meeting duration:
   - Presentation starts at:
   - Questioning starts at:
   - Rounds of questioning:
   - Questioning ends at:
   - In-camera session duration:
   - Outcome:

   (Separate sheets to record questions and answers)

2. Notes on the observation notes
   - Add after the defense (on the side of the above notes) OR after the above notes have been transformed into electronic form
   - Researcher's reflections, feelings, emotions, comments, etc.

APPENDIX B: RESEARCH ETHICS DOCUMENT

McGill

Informed Consent Form

Title of Research:
The PhD dissertation defense as identity talk: An exploration of the *defending candidate identity*

Researcher: Shuhua Chen, PhD student, Integrated Studies in Education, Faculty of Education

Supervisor: Professor Lynn McAlpine, Faculty of Education

Contact Information
Shuhua Chen (Researcher): shuhua.chen@mail.mcgill.ca
Lynn McAlpine (Supervisor):lynn.mcalpine@mcgill.ca

Purpose of the research
Under a larger SSHRC project that aims to document and understand the experiences of doctoral students, this study particularly looks at doctoral students' experiences of the final dissertation defense. Through an identity lens, it mainly answers the questions of *How do doctoral students make sense of defending their dissertation?* and *How do they construct meaning of their defense in terms of their academic identity?* This research addresses the gap that there is no empirical research about the North American doctoral dissertation defense, and will provide doctoral students, supervisors, and defense examiners with information about and insights into this final milestone event in doctoral students' journey.

What is involved in participating
Your participation means you agree to complete an electronic demographic form sent by email and to answer questions in two oral interviews.

- The first interview will be conducted a few days before your defense. You will be asked about your doctoral study experiences and your feelings and expectations regarding the incoming defense.
- The second interview will be conducted a few days after your defense. You will be asked to reflect upon your defense experience.
- Each interview will last approximately one hour, and will be audio-taped in its entirety.
- In order to inform aspects of the post-defense interview, the major researcher (Shuhua Chen) will attend your oral defense and take notes.

- The **anonymized** data may be available for other members of the research team (composed of professors and graduate students) that conduct the larger project mentioned in the previous section.

Dissemination of the results
This project will primarily come out as the doctoral dissertation of the major researcher. Beyond this, the results may be presented at professional conferences and submitted for peer review and publication in professional journals and/or newsletters.

Your rights as a participant
- Your participation is entirely voluntary.
- You may decline to answer any questions.
- You may withdraw at any point of the research.
- You have the right to review all of the data that is related to you at any time.
- You may ask for a copy of the report (of any form) of this research.

Privacy and confidentiality
- You will be assigned an alias. Any information that may reveal your identity (your specific research topic, the title of your dissertation, the name of your supervisor(s) or your committee members) will NOT appear in any report of any form.
- All the interview recordings, transcripts, demographic information, and observation notes will be stored in safeguarded conditions.
- If data from this study is used for other purposes than what has been indicated above, your consent will be sought.

Consent
I have read the above and I understand all of the conditions. I freely give consent and voluntarily agree to participate in the above aspects of this study. I understand that my identity will be protected and that all records will be coded to guarantee anonymity; audiotapes will be used only for research purposes.

By signing below, I agree to complete a demographic information form, participate in the pre- and post-defense interviews, and be recorded in both of them.

Participant's Name (print): _____

Participant's Signature: _____

Date: _____

Researcher's Name: Shuhua Chen

Researcher's Signature: _____

Date: _____