

AN INVESTIGATION OF THE DOCTORAL DISSERTATION LITERATURE
REVIEW: FROM THE MATERIALS WE USE TO PREPARE STUDENTS
TO THE MATERIALS THAT STUDENTS PREPARE

by

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ABSTRACT

An Investigation of the Doctoral Dissertation Literature Review: From the Materials
We Use to Prepare Students, to the Materials That Students Prepare

by

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Utah State University, 2011

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Practically speaking, a well-conducted review of literature is central to a scholar's ability to pose pertinent and timely questions within their field. As part of the culminating written assessment of a Ph.D. candidate, the dissertation literature review provides a unique vantage point to explore future scholars' preparation. In spite of its central role within the research process, research about how future scholars are taught the doctoral competencies necessary to conduct a review of the literature for the dissertation or how the dissertation literature reviews are assessed is limited.

In two separate studies, this research uses the Boote and Beile's *Literature Review Scoring Rubric* as a framework to explore the textbooks used in the early stages of doctoral education and the quality of dissertation literature reviews from a field of education research. In the first study, seven of the top selling education research methods textbooks from 2010 were analyzed to determine how well they cover the 12

performance criteria on the rubric. While the results were varied, the majority of textbooks were not adequate in their coverage of the performance criteria identified by Boote and Beile. In short, the materials used to prepare doctoral students may not be equal to conveying critical components of the literature review.

Efforts were then devoted to a replication study of exploring the end results of doctoral training and preparation. In the second study, the *Literature Review Scoring Rubric* was used to assess the quality of 30 randomly selected dissertation literature reviews from Instructional Technology. The scores of the dissertation literature reviews were also varied. While some dissertation literature reviews in this study were of high quality and scored well, the majority of them were of a lower quality.

(137 pages)

PUBLIC ABSTRACT

An Investigation of the Doctoral Dissertation Literature Review: From the Materials

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To reduce the risk of repeating prior research efforts or choosing incorrect research methods, a sound literature review should be performed before undertaking a new study. As such, the literature review occupies a well-defined role in the research process. It is natural to assume much research has been done in how these skills are taught to future scholars. However, this is not the case. Research in this area is limited and varied. This dissertation builds on existing efforts and fills in a portion of the missing research. This work examines some of the textbooks used to teach doctoral students literature review skills. It also looks at the current state of dissertation literature reviews from a specific field in education, Instructional Technology.

The Boote and Beile *Literature Review Scoring Rubric* is a widely used source of information about important criteria for a dissertation literature review. A scoring rubric is a list of critical features for a piece of work. Rubrics help students know how their work will be evaluated. In this dissertation, researchers use the *Literature Review Scoring Rubric* as a framework to examine textbooks used to teach doctoral students literature review skills. They then assess the quality of dissertation literature reviews using the rubric.

In the first study, researchers analyzed seven top-selling education research textbooks using content analysis techniques. They wanted to determine how well the textbooks covered the items on the *Literature Review Scoring Rubric*. Each textbook received a final letter grade, much like a student in a classroom. Three of the textbooks received a failing grade of F, one received a C-, another received a B, and one received an A-. This study supports the claim that textbooks used to teach doctoral students tend to focus on search strategies and not on the more broad requirements of a dissertation review.

The second study replicates Boote and Beile's study. Using the *Literature Review Scoring Rubric*, researchers evaluated 27 randomly chosen dissertations from

Instructional Technology. They wanted to know if the literature reviews from Instructional Technology scored differently than ones from the general field of education. They also wanted to know if the dissertation study design (i.e., qualitative, quantitative, or mixed methods) affected the quality of the review. The researchers also examined the rubric's ability to consistently measure the quality of the reviews.

The study showed the literature reviews from Instructional Technology had a lower average score (19.96 out of 37 possible points) than ones from education as a whole (24.08 out of 37 possible points). The lower average scores may be due to the field itself. It may also be in part because researchers did not select dissertations based on the quality of the program. Finally, the use of different researchers than the Boote and Beile study may have been a factor in the differences. Study design also had little effect on the overall score of the dissertation literature review. Quantitative dissertations scored better

From a practical viewpoint, faculty can use the findings from the first study to guide the selection of teaching materials. They can also examine the curriculum to determine how it can be strengthened or supplemented. From a scholarly view, these two studies add to the developing discussion about the dissertation literature review. The first study addresses the oft-neglected research surrounding materials used to teach literature review skills. The second study extends Boote and Beile's research into a specific field of study.

DEDICATION

To God, whose plan is always better than mine.

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Giants have necessarily lined the path to this dissertation. Without the selfless help, sustaining belief, and inspiration of these individuals, I could have not accomplished the task at hand.

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CHAPTER 1

INTRODUCTION

Overview

The ability to judge the quality of research, extract the meaningful and applicable findings and then synthesize the information into a well crafted review is one indicator of a doctoral candidate's competency to function within the research community (Golde, 2007; Kamler & Thomson, 2006). The doctoral dissertation is the culminating written assessment of a PhD candidate's educational experience and reflects the training received and abilities developed in a doctoral program (Cuetara & LeCapitaine, 1991; Isaac, Quinlan, & Walker, 1992; see also Association of American Universities, 1998; Council of Graduate Schools, 1991, 1997). As part of the doctoral dissertation, the literature review provides a unique vantage point. The dissertation literature review allows others to examine the overall quality of a student's preparation for future work as an independent researcher who understands the literature related to their topic (Holbrook, Bourke, Fairbairn, & Lovat, 2007; Holbrook, Bourke, Lovat, & Dally, 2004).

The centrality of the literature review and its well-defined role within in the research process would lead one to assume much research has been conducted in understanding how the literature review process is taught to doctoral students and how the dissertation literature review is assessed. However, this is not the case as the research in this area is limited and varied. There is a small but growing body of literature emerging on the necessary components of the doctoral literature review (Bruce, 1993),

faculty and supervisor perspectives (Green & Bowser, 2003; Zaporozhetz, 1987), graduate students' experiences with literature reviews (Bruce, 1994a, 2001; Green, 2009; Kwan, 2006, 2008; Qian & Krugly-Smolka, 2008), and the assessment of the literature review (Boote & Beile, 2004, 2005; Green & Bowser, 2006; Holbrook et al., 2007).

Using the Boote and Beile (2005) *Literature Review Scoring Rubric* (Appendix B) as a framework for investigation, this dissertation focuses primarily on the texts used to teach literature review skills to doctoral students and the assessment of the finished product of the doctoral dissertation literature review. The findings of two studies reveal the simplified and compartmentalized approach to literature reviews contained within leading education research textbooks is reflected in the quality of a random sample of dissertation literature reviews from the field of Instructional Technology.

Why Study the Doctoral Dissertation Literature Review?

Practically speaking, a well-conducted literature review is central to a scholar's ability to pose pertinent and timely questions within their field (Boote & Beile, 2005; Delamont & Atkinson, 2001; Golde, 2007; Montuori, 2005). It could be posited that literature review skills embody the very nature of what it means to be a scholar and researcher (Golde, 2007, 2010). The Carnegie Foundation for the Advancement of Teaching defined scholarship as the ability to understand the intellectual history of the field, to use the best ideas and practices, and to be able to represent these things to others. The implementation of scholarship is notably embodied in literature review activities of reading, interpreting, and analyzing arguments, and synthesizing a wide variety of ideas

(Hart, 1998). These critical competencies (Green, 2009) are not just the foundation of good scholarship, they are the very heart of a scholar's ability to contribute to his or her field in an interactive, connective, reflective, and generative manner (Shulman, 2005). Thus, sophisticated, integrative reviews of literature are critical within the field of education as we delve into complex, "hard-to-do" problems (Johnsrud & Banaria, 2004; Lagemann, 1999).

The past decade has seen an increased awareness of how future scholars and researchers are formed (Evans, 2007; Tinkler & Jackson, 2000; Shulman, Golde, Bueschel, & Garabedian, 2006; Walker, Golde, Jones, Bueschel, & Hutchings, 2008). With this awareness has come a criticism that programs sometimes fall short in preparing emerging scholars and allows doctoral students to graduate without the necessary skills to work independently as researchers in their fields (Berliner, 2006; Golde, 2006; Golde & Walker, 2006; Richardson, 2006). If improvement to the quality of education research is the end goal, it is essential that emerging scholars be taught the habits of the mind, heart, and hand (Shulman, 2005) unique to their discipline. The ability to competently review literature is a competency central to scholarship and as such, occupies a place within the broader experience of doctoral education.

A parallel discussion to the one of how best to train emerging scholars is the emerging question of the role of the literature review within the dissertation. Is the dissertation literature review simply an exercise to inform *that* particular study (Krathwohl & Smith, 2005; Locke, Spirduso, & Silverman, 2007; Maxwell, 2006) or does it serve a larger purpose, which moves beyond merely informing the dissertation study to a central

role in doctoral education (Boote & Beile, 2005; Golde, 2009; Green, 2009; Kamler & Thomson, 2004)? This dissertation takes the view that the dissertation literature review serves an important function in the formation of scholars (Green, 2009; Kamler & Thomson, 2004) and is part of a creative process (Montuori, 2005) in which doctoral students begin to join the community of discourse.

Improving Education Research

For the past 20 years, there has been substantial criticism made of education research, primarily asserting that it lacks rigor and is frequently not useful (see Oancea, 2005; Oancea & Pring, 2008, for an indepth synthesis and analysis). Additionally, editors of journals of education research consistently draw attention to the lack of scholarship and basic research skills evidenced in articles submitted for publication (Alton-Lee, 1998; Grant, 1999; Lather, 1999; LeCompte, Klingner, Campbell, & Menk, 2003; Onwuegbuzie & Daniel, 2005). What is often overlooked is that the foundation and development of a quality research study may stem from the quality of the review of literature associated with it (Holbrook et al., 2004, 2007; Mullins & Kiley, 2002). For example, editors Onwuegbuzie and Daniel (2005) assert the literature review section of 80% of the 52 manuscripts they examined were underdeveloped and contained dated citations as well as statements that were not supported by the citations within the literature review. Consequently these articles were found to contain faulty methods or poor analysis that hampered publication. Similar findings were reported by Alton-Lee (1998) in an earlier examination of articles submitted for review.

The research about the quality of literature reviews in many research articles points to the widespread need for a better understanding of how emerging scholars experience and are taught the skills necessary to do a good literature review. Doctoral students indicate they want to do well with their research (Delamont & Atkinson, 2001; Delamont, Atkinson, & Parry, 1998; Thomson & Walker, 2010), and specifically take a leadership role in devising, designing, and carrying out a line of research (Walker et al., 2008). Doctoral students' low levels of proficiency to independently design and carry out research (Berliner, 2002) may be overcome by their intrinsic motivation to learn the information literacy skills needed to successfully conduct a review of literature (Green, 2009).

Teaching Doctoral Students to Do a Dissertation Literature Review

Johnsrud and Banaria (2004) argued that doctoral students' ability to carry out independent research is affected by the quality of the instruction they receive. Hart (1998) further asserted that poor reviews of literature cannot necessarily be blamed on the student researchers; it is often rather the case that the fault lies with those providing the doctoral students' education and training. Consequently, understanding the types of instruction students at the doctoral level are receiving about the critical competencies (Green, 2009) needed to conduct effective, comprehensive reviews of literature becomes a primary component to exploring the quality of dissertation literature reviews.

Introductory education research methods courses are generally required for all doctoral students (Mundfrom, Shaw, Thomas, Young, & Moore, 1998; Onwuegbuzie,

Slate, & Schwartz, 2001). In such courses, doctoral students are exposed to information in their required textbooks on how to conduct a literature review. However, scholars assert that education research methods textbooks used in these courses place much more emphasis on literature review search techniques rather than on the process of writing well-crafted literature reviews (Boote & Beile, 2005; Dellinger, 2005; Jackson, 1980). They further stated that these textbooks may lack a cohesive approach to the critical competencies needed to craft a well-written dissertation literature review (Green, 2009). Therefore, analyzing these textbooks provides an easy point of entrance into understanding the process of teaching doctoral students the critical competencies of reviewing literature.

Assessing the Doctoral Dissertation Literature Review:

The Literature Review Scoring Rubric

Assessment is an integral part of the teaching and learning process (Boud & Falchikov, 2007; Heywood, 1989); assessing students' performance across an authentic task such as the dissertation literature review can be a complicated matter. Such a task calls for an authentic approach to assessment (Andrade, 2000; Montgomery, 2001, 2002; O'Malley & Pierce, 1996; Wiggins, 1989). One assessment instrument that addresses the dissertation literature review is the Boote and Beile's (2005) *Literature Review Scoring Rubric*. This rubric is an instrument specifically designed to assess the quality of dissertation literature reviews in education research. Initially constructed as a scoring rubric, the rubric and its criteria are being used as a pedagogical tool for teaching some of

the critical competencies for reviewing literature in ever increasing and diverse instructional settings. It is even included in the most recent edition of a popular education research methods textbook (Mertens, 2009). However, the initial Boote and Beile study has never been replicated nor has adequate reliability evidence been produced to warrant widespread adaptation. Additionally, no studies have been conducted to examine whether PhD students are being taught the constructs contained in the *Literature Review Scoring Rubric*.

Structure and Objectives

This dissertation uses the criteria from the Boote and Beile (2005) *Literature Review Scoring Rubric* to explore the dissertation literature review in two separate articles. The objective of this dissertation is to supply part of the missing literature about doctoral students' preparation to undertake a literature review and the assessment of the dissertation literature review. In the first article (Chapter 3) one aspect of the process of doctoral students' experience in learning how to review the literature is explored through an analysis of the top education research textbooks used in 2010. In this study, seven textbooks were analyzed to see how well they covered the 12 criteria from the *Literature Review Scoring Rubric* (Boote & Beile, 2005). The results indicate that a small percentage (11%) of universities granting doctorates in education are using textbooks that cover the criteria adequately, while the majority (60%) are using textbooks that cover the criteria poorly. These findings support the assertions that education research methods textbooks place more emphasis on literature review search techniques than on the process

of writing the review.

The focus of the second article (Chapter 4) is the assessments of the doctoral dissertation literature review, using the Boote and Beile (2005) *Literature Review Scoring Rubric*. The purpose of this study is to replicate Boote and Beile's (2004) study, which assessed dissertation literature reviews from education research in general, in a more focused area of education research, specifically Instructional Technology. In this study, 30 dissertations from Instructional Technology were randomly selected and scored twice using the Boote and Beile (2005) *Literature Review Scoring Rubric*. The first pass scoring focused on just the literature review section of the dissertation while the second pass scoring focused on the entire dissertation. The results indicate little difference exists between the scores for literature review section and the overall dissertation when examined as a whole, providing some support for Boote and Beile's (2004) focus on the literature review chapters of the dissertation in their initial work. However, the intraclass correlation on interrater reliability was not at all conclusive (.344), indicating very little agreement on first pass scoring of these dissertations. The findings suggest that dissertation literature reviews in Instructional Technology show the same need for improvement as dissertation literature reviews from education as a whole.

Finally, in the concluding chapter, findings from the articles are synthesized into a composite picture framed by the criteria from the *Literature Review Scoring Rubric*. This composite picture affords us a view of what doctoral students might be taught about the critical competencies of reviewing the literature and the current state of doctoral dissertation literature reviews in a field of study within education research. The current

status of the field of doctoral dissertation literature review research will be discussed and an expanded research agenda will be presented.

CHAPTER 2

REVIEWING THE DISSERTATION LITERATURE REVIEW

Many scholars point to the centrality of the dissertation literature review in doctoral education (for example Boote & Beile, 2005; Delamont & Atkinson, 2001; Kamler & Thomson, 2006). However, there has been little discussion about how to teach the skills needed to craft a well-constructed review of the literature or how to assess the finished product. This is surprising as literature reviews are an important part of writing a doctoral dissertation (Boote & Beile, 2005; Cooley & Lewkowicz, 1995, 1997; Maxwell, 2006; Meloy, 2002). Swales and Feak (2000) captured a possible reason for this lack of attention with the remark,

The [literature review] as part of a research paper, proposal, thesis, or dissertation is often thought of as being a boring but necessary chore. Such [literature reviews] are often criticized but are rarely praised. After all, one rarely hears comments such as “The most brilliant part of your thesis was the literature review! (p. 116)

Although Cooper (1988) called for more careful scrutiny into the literature review, inquiry into reviewing literature for the dissertation remains relatively unexplored territory in education research.

Fundamental to the discussion of the dissertation literature review is the ongoing but implicit debate (Maxwell, 2006) about the purpose of the review of literature in the dissertation. One view holds the dissertation literature review is to inform *that particular* study (Krathwohl & Smith, 2005; Locke et al., 2007; Maxwell, 2006). It is not a place to “review the body of literature that bears on a problematic area” (Locke, Spirduso, & Silverman, 1999, p. 69). According to this line of reasoning, dissertation literature

reviews are *for* research, they are not *of* research (i.e., reviews written for publication; (Maxwell, 2006). The argument for this type of dissertation literature review is centered on the question of relevance and ensuring that the reported studies inform the research in the dissertation (Krathwohl & Smith, 2005; Locke et al., 1999; Maxwell, 2006).

In contrast, some believe that in reviewing the literature for a dissertation, doctoral students begin to form their identity and stake their claim in the research world (Boote & Beile, 2005; Green, 2009; Golde, 2010; Hall & Burns, 2009; Kamler & Thomson, 2006). In this view, the dissertation literature review becomes a central part of the formation of emerging scholars (Boote & Beile, 2005). It moves beyond merely informing the individual dissertation study (Locke et al., 1999; Maxwell, 2006) to being a place where doctoral students learn the habits of their discipline (Golde, 2007, 2010; Shulman, 2005). This expanded purpose of the dissertation literature review also encompasses the development of critical doctoral competencies as such as reading, writing about, and synthesizing large bodies of literature (Green, 2009; Golde, 2010; Kwan, 2008; Qian & Krugly-Smolska, 2008).

Defining the Dissertation Literature Review

Literature Reviews

Cooper (1985, 1988, 1998), an early researcher in the area of literature reviews, put forth a general definition of a literature review, stating that in his opinion there was a great need to encourage and facilitate the evaluation of reviews of literature.

It seems clear that a general definition of a literature review must contain at least two elements: First, a literature review uses as its database reports of primary or

original scholarship and does not report new primary scholarship itself.... Second, a literature review seeks to describe, summarize, evaluate, clarify, and/or integrate the content of the primary reports. (Cooper, 1988, p. 107)

However, Cooper's definition is somewhat limiting as it excludes the use of secondary sources, such as policy statements, review articles in journals, most textbooks, handbooks, or other scholarly books. Such sources are often useful because they show how various studies are related and sometimes provide a meaningful structure to what is known about topic or problem (Gall, Gall, & Borg, 2007).

Onwuengbuzie, Collins, Leech, Dellinger, and Jiao (2010) offered the most current refinement of the definition of a literature review. They state that a literature review is an "interpretation of a selection of published and/or unpublished documents...that optimally involves summarization, analysis, evaluation, and synthesis of the documents" (p. 173). It is of interest to note that many of the recent definitions (see Creswell, 2008; Fraenkel & Wallen, 2008; Gay, Mills, Airasian, 2009) of a literature review fail to incorporate Cooper's original emphasis that a quality literature review should use only primary or original scholarship. This shift in emphasis allows for the inclusion of a rich body of literature found outside traditional textual literatures (Kamler & Thomson, 2006; Ogawa & Malen, 1991).

The Dissertation Literature Review

The doctoral dissertation review of literature demonstrates that doctoral candidates have acquired a deep comprehension of the critical competencies and foundations of their discipline (Golde, 2007; Green, 2009; Lovitts, 2007). It also serves the purpose of situating the doctoral student within their community of discourse as they

survey the research landscape and acknowledges key players and movements (Montuori, 2005). However, the discussion surrounding the definition and purpose of a dissertation literature review has been limited and dichotomous in nature, arising separately from the library sciences on the one hand or from other academic fields such as academic writing on the other.

While the library sciences generally emphasize the first element of Cooper's (1988) definition, which is information seeking (Bruce, 1997, 2001; Green & Bowser, 2003), other academic fields tend to emphasize the second element of Cooper's definition, that of summarizing, evaluating, and synthesizing the literature (Dellinger, 2005; Golde, 2007; Zaporozhetz, 1987). What this divided approach to understanding the literature review lacks is an acknowledgement of the connected nature of doctoral competencies such as reading, writing, and conducting research (Green, 2009; Kamler, & Thomson, 2006; Kwan, 2008).

Perhaps the best example of an integrated approach to understanding the dissertation literature review is found in Green's (2009) PhD thesis. She examined the intersection of the lived experiences of graduate students, faculty supervisors, and librarians that occurs during the crafting of a dissertation literature review. Green draws on a more integrated view and definition of dissertation literature reviews, where reviewing literature for the doctoral dissertation is seen as an integrated, iterative process (Combs et al., 2010) and the process and end product of the literature review are viewed as being interrelated (Green, 2009). She contended that the dissertation literature review is "an exploration" (p. 4) as doctoral students situate their research within their field.

During this process, doctoral students identify existing scholarship, develop support for the formulation of the research problem, and define new areas of research within bodies of knowledge. Green further extended the definition of reviewing literature for the dissertation as being a place where “information, knowledge, reading, writing, research craft and disciplinary culture converge” (p. 4).

While not an exhaustive list, the doctoral review of literature should demonstrate the doctoral student has developed the discriminatory ability to judge high quality work from mediocre work, is able to identify what is known from what needs to be known, can connect research studies to other work, possibly in other fields, offers multiple theoretical perspectives, and synthesizes and appraises others’ work (Boote & Beile, 2005; Delamont & Atkinson, 2001; Galvan, 2009; Golde, 2007, 2010; Maxwell, 2006; Richardson, 2006). The end result is a literature review in which reviewer and the field communicates with each other (Montuori, 2005) and which offers readers innovative and best-fitting designs and frameworks for the research project (Green, 2009).

Related Phenomena and Variables

Doctoral Education: Preparing Future Education Scholars

Doctoral education has the objective of preparing future scholars in general. At its best, doctoral education forms new scholars (Walker et al., 2008) and prepares them to become stewards of the discipline (Golde & Walker, 2006; Richardson, 2006). However, the Carnegie Commission on Higher Education (2001) revealed that many of the core research competencies were not being taught in doctoral programs. As such, leaders in

the field have called for major revisions to the current practices of doctoral education in order to better prepare students (Berliner, 2006; Golde, 2006; Golde & Walker, 2006; Maki & Borkowski, 2006; Richardson, 2006).

The competencies of scholars and stewards of a discipline include the ability to understand the history of the field and its theoretical underpinnings, have a sense of the broader research landscape, speak about how their work and their field contribute to the broader questions, and to share their work with others through writing (Carnegie Foundation for the Advancement of Teaching, 2003). Many of these competencies are developed and refined during the process of reviewing literature for the dissertation (Green, 2009; Golde, 2010; Kamler & Thomson, 2006). Therefore, understanding how the dissertation literature review fits within the broader field of doctoral education is an important part of improving current practices.

Performance Expectations for the Dissertation

Other related issues are the performance expectations faculty set for doctoral students undertaking the work of writing a dissertation. Although the most commonly stated performance criterion given for the dissertation is that it make an “original” or “significant contribution” to knowledge (Tinkler & Jackson, 2004; Winter, Griffiths, & Green, 2000), there are few attempts to operationalize what this means (i.e., B. Burnham, personal communication, February 25, 2011 [see Appendix C]; Lovitts, 2007) and performance standards are largely implicit (Denicolo, 2003; Holbrook, 2001; Lovitts, 2007). Aside from Burnham (2009) and Lovitts, there is a scarcity of information about the performance criteria for the dissertation.

Instructional Materials Used to Teach Literature Review Skills

Some variables related to the dissertation literature review are the instructional materials students may encounter in the process of learning how to review the literature for their dissertation. In addition to published articles, these resources include self-help guides prescribing methods to improve the quality of the reviews and textbooks used by doctoral students in their coursework.

Historically, in the mid to late 20th century, there was a shift away from the narrative form of a literature review to the meta-analysis of research data (Glass, McGaw, & Smith, 1981; Rosenthal, 1984). However, Cooper (1988) felt that this shift was done at the expense of neglecting many of the other purposes of reviewing literature. In an attempt to correct this omission, Cooper introduced his Taxonomy of Literature Reviews, which he felt could be used for assessing literature reviews. The different criteria he suggests for assessing the literature review are focus, goal, perspective, coverage, organization, and audience. The strength of the taxonomy lies in the recommendations on how to improve the process of reviewing literature by clarifying the focus of the review for each of the six criteria. Randolph's (2009) article-length guide to writing a literature review for the dissertation is the most recent attempt to operationalize these recommendations.

In 1998, Hart published the book *Doing a Literature Review: Releasing the Social Science Research Imagination*. Aimed specifically at the graduate student, perhaps the largest contribution of this work is the clearly delineated purposes the review of literature plays in research. These purposes appear to be similar in nature to the seven

essential objectives and purposes of reviewing literature in the sciences suggested by Afolabi (1992). About the same time Hart's book was published in England, Granello (2001) published an application of Bloom's Taxonomy of Education Objectives to doctoral literature reviews. In this article, a model was presented to help faculty advisors develop "cognitive complexity" in graduate students' literature reviews by mentoring them through the increasing levels of Bloom's taxonomy.

Over the next several years, there were two book-length guides published helping graduate students write a literature review, from the first draft to completion (Galvan, 2009; Pan, 2008). Many of these models and tools are more closely aligned with the limited purpose of the dissertation literature review (Krathwohl & Smith, 2005; Locke et al., 1999; Maxwell, 2006) than with the view that the dissertation literature review is the place where doctoral students develop crucial doctoral competencies (Boote & Beile, 2005; Green, 2009; Golde, 2010; Kamler & Thomson, 2006).

Another tool being used to teach literature review skills to graduate students is the Boote and Beile (2005) *Literature Review Scoring Rubric*. Built on the eleven purposes set forth in Hart's (1998) work, the rubric was originally developed for use as a scoring rubric for dissertation literature reviews in education research. However, it is most frequently used as an instructional tool to convey the purpose and performance expectations of the literature review in graduate education (Combs, Bustamante, & Onwuegbuzie, 2010a; Freer & Barker, 2008; Mertens; 2009; Randolph, 2009).

More recently, Lovitts (2007) further clarified the expectations of the different levels of quality work in a dissertation literature review, using Boote and Beile's

Literature Review Scoring Rubric (2005) as an example of a “high-quality rubric developed by experts for the literature review” (p. 99). Combs, Bustamante, and Onwuegbuzie (2010b) have also moved the effort to understand and facilitate literature review skills in graduate students another step forward with their nine-step model based on Vygotsky’s zones of proximal development. They also incorporated and recommended use of the Boote and Beile *Literature Review Scoring Rubric*, this time as part of the ninth step in which the doctoral student evaluates both the process of reviewing the literature and the end product. However, empirical investigation into instructional materials used to teach literature reviews to graduate students has been largely silent.

Many people have pointed to the lack of useful information in education research textbooks to assist doctoral students in writing the review of literature for their dissertation (Boote & Beile, 2005; Green, 2009; Jackson, 1980; Kamler & Thomson, 2006). Boote and Beile claimed that doctoral students “seeking advice on how to improve their literature reviews will find little published guidance worth heeding” (p. 5) and that current textbooks used by many doctoral students place greater emphasis on methods and data analysis than reviewing literature. The only published empirical study examining the literature review section of education research methods is Onwuegbuzie and Leech’s (2005) analysis of 17 textbooks. Their study revealed errors of commission and omission about literature reviews that may lead to misconceptions among students about reviewing literature. However, there has not been a systematic investigation into the claims that education research methods textbooks are an “insufficient pedagogy” (Green, 2009) to prepare doctoral students in reviewing the literature for the dissertation.

The Study of the Dissertation Literature Review

The paucity of research about the dissertation literature review and its attending critical competencies (Green, 2009) may be based on the pervasive assumption that doctoral students enter into their programs with the necessary research and writing skills to successfully carry out the task (Barry, 1997; Zuber-Skerritt & Knight, 1992). Little is known about how students experience the process of reviewing the literature for their dissertation. Even less is known in regards to faculty views and experiences with supervising graduate students in the literature review process and how they evaluate the finished product. As the literature base for this area is extremely limited, the current work necessarily includes empirical studies of graduate students at the MS level who are developing the literature review portion of their thesis.

To locate studies used in this portion of this dissertation, an initial search of literature was made utilizing ERIC, Education Full Text, Digital Dissertations, and Google Scholar. The search terms used were a combination of *dissertation literature review*, *graduate literature review*, *review of literature*, *dissertation*, *doctoral theses*, or *literature synthesis*. The results were delimited by the exclusion of any publication that was itself a literature review about a specific topic area not directly related to theses or dissertation literature reviews, such as a literature review of social work training practices. Only those articles, theses, dissertations, books, and so forth, reporting empirical studies related to dissertation literature review or reviews of literature for graduate students were consulted. After locating primary sources from these databases, the reference sections were then consulted and further efforts were made to find additional primary sources, in

some instances contacting authors of cited works to procure their referenced but unpublished data. Fifteen empirically based research reports were found using these search strategies.

Themes of Empirical Research

From the analysis of the literature, three themes emerged. The first theme was the experience of the graduate student in relation to reviewing the literature. These studies center on doctoral students' perceptions regarding the literature review for the dissertation or thesis (Bruce, 1992, 1994b; Hernandez, 1985), their abilities to define the scope of the dissertation literature reviews (Bruce, 1993, 2001; Kwan, 2008), and the rhetorical devices they used in the written dissertation literature review (Kwan, 2006). The second theme to emerge was of the faculty and supervisors' perception of the doctoral dissertation literature review (Holbrook et al., 2007; Lovitts, 2007; Zaporozhietz, 1987). One notable exception to these separate, but related, themes was Green's (2009) doctoral thesis. Her qualitative study bridges the divide between the doctoral student and the faculty as it examines the intersecting relationship among graduate students, their faculty supervisors, librarians, and the doctoral review of literature. The third and final theme to emerge from the empirical literature was the assessment of the dissertation literature review through the use of rubrics (Boote & Beile, 2004; Freer & Barker, 2008; Fitt, Bentley, & Gardner, 2008; Green & Bowser, 2003, 2006).

Doctoral Students' Views and Experiences

The empirical research about the dissertation literature review paints a sometimes-contradictory portrait of doctoral students. Opinions about doctoral students' deficiencies in reviewing the literature plays a dominant role in this discourse and tends to focus on the skills doctoral students lack in terms of their writing ability (Kamler & Thomson, 2006). At times, doctoral students are viewed as being unable to contribute to the scholarship in their fields because they are unprepared to conduct literature reviews (Boote & Beile, 2005) and lack the ability to navigate the information-rich environment (i.e., Grassian, 2004; Kuruppu & Gruber, 2006; Yee, 1989). In contrast to this diminished view, current research shows graduate students are intentional learners who seek to master the competencies needed to craft a well-written review (Green, 2009; Green & Macauley, 2007) and are eager to participate in efforts to improve their literature reviews (Freer & Barker, 2008). However, some of the earlier views about doctoral students' abilities may be warranted as some research indicates the quality of literature reviews from dissertations in the field of education research is generally of poor quality (Boote & Beile, 2004; Fitt et al., 2008).

The research literature also portrays doctoral students as possessing a limited and linear conception of a dissertation literature review. Using phenomenographic analysis of interviews with graduate students, Bruce (1992, 1994b) identified six different ways in which graduate students relate to the literature review. Students relate to the literature review as a list, a search for information, a survey of the knowledge base, as a path to learning, a facilitator of research and as a report. Bruce proposes these six ways of

relating are linear and hierarchal in nature, and when a student achieves the next level of relating to the literature, they do not return to the lower levels. However, this linear view of relating to the dissertation literature review does not mirrors the usual cyclical process of academic writing which includes gathering information, evaluating and assessing this new information and then synthesizing it into the research landscape (Green, 2009; Kwan, 2008). Additionally, it is not reflective of the recursive behavior in which doctoral students actually undertake the review of literature for their dissertation (Green, 2009; Kamler & Thomson, 2006; Kwan, 2008).

Within the research literature, doctoral students are also characterized as struggling to define the scope of their review. In the earliest empirical study examining graduate students' experience with the literature review (Hernandez, 1985), doctoral students describe the literature review section as the most difficult part of the research process. In particular, students reported difficulty with knowing how to define the scope of the review and did not always know how to go about searching for literature. While the methodologies reported in this study do not give enough information to assess the overall quality of the research, the results do shed some light on the struggles encountered by graduate students as they engage in the research and literature reviewing process. These struggles are echoed in Nelson's (2007) findings that 65% of graduate students find the literature review portion of their dissertation to be the most difficult part of the research process.

Bruce (1993, 2001) also explored graduate students' perception and understanding of the scope of their literature review in relation to information literacy

skills. For the first study, Bruce analyzed written responses to the question, “What do you mean when you use the term ‘literature review’?” for themes that were related to scope of the review of literature. In the second study, she asked the additional question, “What is the meaning of a literature review for your research?” In both studies, Bruce (2001) identified eight concerns students had in relation to the literature review: topicality, comprehensiveness, breadth, relevance, currency, exclusion, authority, and availability. The difficulty graduate students encounter in defining the scope of their literature review may be reflective of cross-purposes they frequently encounter (e.g., Boote & Beile, 2005; Maxwell, 2006) when trying to determine the purpose of the review. Framing the graduate students’ responses to understanding the scope of the literature review as “concerns,” to be addressed by librarians perpetuates the view that graduate students are information illiterate (Green & Macauley, 2007) and need remedial help (Macauley, 2000, 2001; Norgaard, 2003).

In contrast to many of these studies, Green’s (2009) well-developed doctoral thesis offers a perspective of doctoral students that portrays them as intrinsically motivated individuals who can independently develop the competencies needed to undertake a review of literature. In her qualitative dissertation study, Green interviewed 42 doctoral students, faculty advisors and librarians in an attempt to overlay foundational principles in the pedagogy for dissertation literature reviews. By seeking out multiple perspectives and experiences of major stakeholders in the doctoral dissertation literature review (the student, the faculty advisor, and the research librarian), Green integrates the two dichotomous elements of Cooper’s (1988) definition, namely searching for literature

and writing.

From her findings of interviews with the study participants, Green reframes dissertation literature reviewing as part of an overall doctoral pedagogy in which future scholars begin to form their identity (Hall & Burns, 2009) as they undertake a review of literature that is both *for* and *of* research. Thus, Green (2009) moved the study of doctoral literature reviews forward into new territory beyond both Maxwell (2006) and Boote and Beile's (2005) purposes of a dissertation literature review. Her work also heralds a shift from a deficit view of graduate students to one that values their prior knowledge and ability to develop appropriate information literacy skills independent of intervention by faculty supervisors or librarians.

Kwan's (2006, 2008) work was important as it reveals what doctoral students are actually doing when reviewing the literature for the dissertation as opposed to what has been prescribed for them to do for the review. In this way, it is similar to Green's (2009) work. Kwan, however, took a fairly neutral stance on the doctoral students' abilities in relation to reviewing literature for the dissertation. In her 2006 study, Kwan identified three rhetorical structures used in dissertation literature reviews by 20 native English speakers. She classified these rhetorical structures as "moves," each with several strategies.

Move 1 consists of a doctoral student surveying relation research as the doctoral student establishes his or her own research within the broader research landscape. Move 2 consists of the student creating a "research niche" (Kwan, 2006, p. 51) in which he or she makes counter-claims, asserts relevancy and indicates gaps that may exist in the research.

The third move is considered optional, meaning that not every doctoral student used these methods in their review. Move 3 is about the doctoral student “occupying the research niche” (Kwan, 2006, p. 51) they have carved out by proclaiming their research aims and questions, their particular theoretical positions and research design, and their interpretation of terms use in the dissertation. This third rhetorical move some doctoral students make in their dissertation literature review, may be evidence that some doctoral students already use the dissertation literature review as a place for their identity formation as scholars and researchers (Green, 2009; Golde, 2001; Kamler & Thomson, 2006).

Kwan (2008) examined the dissertation literature review by investigating how it is bounded by the types of reading doctoral students engage in across the dissertation process. In essence, she was seeking to understand how doctoral students’ reading affected the scope of their literature review. Using a paradigmatic approach to analyzing the interviews from 16 students, Kwan revealed that reading served different purposes at different points in the dissertation process and when deadlines loomed, reading for the literature review dissolved into the background. From her findings, Kwan proposed that the doctoral activities of reading, writing, and researching are inter-related and that reading and reviewing constitute a key part of the research process. These findings support Kamler and Thomson’s (2006) assertion that reviewing literature for the dissertation does not occur in a decontextualized manner but is part of the development of doctoral competencies that include research, reading, and writing.

Faculty Views and Experiences

Faculty experiences, thoughts, and values in regard to the dissertation literature review comprised the second major theme uncovered in the review of literature. Much like the literature about doctoral students, this small corpus of studies revealed a conflicting view of faculty that depicted some as very interested in the students' experiences in reviewing the literature (Green, 2009) and some as not placing very much emphasis on this portion of the dissertation research process (Zaporozhnetz, 1987).

Zaporozhnetz's (1987) phenomenographic dissertation used extensive interviews of 33 faculty advisors with an average of 17.3 years of experience in supervising doctoral students who were reviewing literature for the dissertation. She found that 59% of the interviewed faculty ranked the literature review 4th or 5th in importance of the five traditional dissertation chapters. In her extensive interviews with faculty, Zaporozhnetz also discovered that the literature review section is the area in which faculty felt they had the least expertise to advise students. Additionally, the advisors interviewed by Zaporozhnetz expected their advisees to have bibliographic skills at the doctoral level, even while many of them confess themselves weak in these same skills. The lack of expertise in advising students in reviewing the literature reported by the participants of Zaporozhnetz's study is reflected in the studies that reveal graduate students' feelings about their preparation (or lack of) to undertake a review of the literature (Nelson, 2007) and independent research (Walker et al., 2008).

These findings are echoed the Holbrook and colleagues (2007) analyses of examiner report data for 501 candidates (1,310 total reports) for PhD theses from five

Australian universities. They were searching for patterns in the comments from examiners in respect to the literature review sections. In Australia, a doctoral thesis (dissertation) is sent out to three independent examiners (typically faculty at another university) for final assessment; these independent examiners help determine whether candidates should be awarded the PhD or not. Each examiner prepares a lengthy report detailing their critique of the thesis. In a content analysis of these final reports, Holbrook et al., found that only about 10% of the final report produced by the examiners pertained to the literature review section of the thesis, although the literature review typically accounts for a larger percentage of the overall length of the dissertation.

Holbrook and colleagues (2007) also found that examiners started off with the expectation the thesis would pass but if they encountered a poorly structured literature review, the reviewers were more likely to scrutinize the work in greater detail, frequently uncovering methodological errors. This is in keeping with Mullins and Kiley's (2002) analysis that revealed a correlation between poor quality literature reviews and faulty methodologies. Journal editors have also commented about troublesome literature reviews in articles submitted for publication in relation to faulty methodological choices in rejected journal submissions (Alton-Lee, 1998; Grant, 1999; Lather, 1999; LeCompte et al., 2003; Onwuegbuzie & Daniel, 2005).

Lovitts (2006, 2007) conducted a notable study in which 276 faculty members were asked to "characterize dissertations and components...at four different levels of quality" (p. 12). In regards to the literature review, Lovitts discovered that some of the faculty admitted to not even reading the literature review sections of the dissertations,

supporting Zaporozhnetz's (1987) claim that some faculty do not value the review of literature as much as other portions of the dissertation. In contrast, others participants in her study felt the review of literature was an important part of the dissertation and indicated they carefully read the literature review section of the dissertations. From these sessions, Lovitts then developed discipline-specific rubrics that outline the levels of quality expected by faculty members for each section of the dissertation including the review of literature. However, while these rubrics are intended for use on doctoral dissertations, they are holistic rubrics with generalized criteria for each section of the dissertation.

Assessment of the Dissertation Literature Review

Much as the assessment of the dissertation is related to the intended purposes of the dissertation (Denicolo, 2003), the assessment of the dissertation literature review is related to the intended purpose of the dissertation literature review (Denicolo, 2003). If the purpose of the review is to inform *only* the study in the dissertation (i.e., Krathwohl & Smith, 2005; Locke et al., 1999; Maxwell, 2006), then a more traditional approach to setting the performance criteria and assessment may be called for (Denicolo, 2003). However, if the purpose of the dissertation literature review is the development of doctoral competencies (i.e., Boote & Beile, 2005; Green, 2009; Golde, 2010; Kamler & Thomson, 2006), then a more integrated and novel form of assessment is needed (Denicolo, 2003).

Performance expectations for the dissertation literature review are tied to the

purpose of the review. For example, Maxwell's (2006) chief complaint about the Boote and Beile (2005) *Literature Review Scoring Rubric* was due to a differing view of the purpose of the dissertation literature review. Maxwell believed the dissertation review is *for* research (i.e., to inform just the dissertation study). Consequently, Maxwell did not believe the performance criteria of the scoring rubric captured what should be measured in the assessment of dissertation literature review. In contrast, Boote and Beile (2006) believed the dissertation literature review is a tool through which the doctoral student is able to "transcend the local academic community" (p. 33). This elevated purpose of the dissertation literature review is reflected in the selection of the criteria, particularly at the highest performance levels.

A necessary part of setting performance expectations is also exploring the best methods of assessing the performance. Assessing students' performance across complex authentic task can be a complicated matter. The multiple faceted, comprehensive nature of reviewing literature for the dissertation lends itself to assessment using rubrics (Reddy & Andrade, 2009; Sadler, 2008; Simon & Forgette-Giroux, 2001). It is not surprising that the single attempt to operationalize the assessment of the doctoral dissertation literature review (Boote & Beile, 2005) is a rubric. Well-designed rubrics can be used not only for evaluation, but also for self and peer assessments as well (Andrade, 2005, 2007; Andrade & Boulay, 2003; Andrade & Du, 2005; Arter, 1993; Arter & McTighe, 2001; Reddy & Andrade, 2009; Simon & Forgette-Giroux, 2001; Stiggins, 2001).

The use of rubrics allows for a more integrated approach to assessment, particularly in assessing written work (Andrade, 2000; Montgomery, 2001, 2002;

O'Malley & Pierce, 1996). Rubrics make faculty more aware of instructional methods and require them to clarify expectations, empowering them to quickly communicate goals, values, and intentions to others (Stevens & Levi, 2005). Rubrics support more timely feedback to students, which can increase student learning (Black & Wiliam, 1998; Ilgen, Peterson, Martin, & Boeschen, 1981; Rucker & Thomson, 2003) and help justify how assessments are conducted (Andrade, 2000).

Within the empirical literature there were five studies focused on the assessment of graduate students' theses or dissertation literature reviews (Boote & Beile, 2005; Fitt et al., 2008; Freer & Barker, 2008; Green & Bowser, 2003, 2006) and all of them used rubric-based assessment methods. Green and Bowser's (2003) study used a rubric designed for the study that consisted of ten criteria covering three major areas: content, presentation, and writing/format. They assessed eight literature reviews from master's students: four of the reviews randomly selected from graduate students who had been instructed on the rubric's criteria in a collaborative learning model and four reviews randomly selected from a group of graduate students who did not participate in the collaborative learning groups. Two different raters using the rubric assessed each review. In this initial study, there was a medium effect size (Cohen's $d = 0.57$), indicating positive overall score gains for experimental group. However, the sample size is very small, so any conclusions about the effectiveness of this rubric as a pedagogical tool are necessarily limited. Additionally, the authors do not report any reliability data, which would have been easily calculated from the raw scores.

Green and Bowser's (2006) report was an extension of the previous project to develop an analytic rubric to assess the quality of literature reviews. While they did refine some of the criteria, the rubric remain essentially the same as in the previous study with the criteria focusing on the content, presentation, and writing/format of the literature review. These criteria differed sharply in their emphasis from the criteria in the Boote and Beile (2005) rubric, reflecting the first element of Cooper's (1988) definition of a literature review, searching for literature. This is not surprising as Green and Bowser's background is in the library sciences.

In the study, students were instructed on the rubric criteria and then used it as a pedagogical tool (Andrade, 2000) to write their own reviews of literature. A random sample of literature reviews from this group was compared to a random sample of literature reviews from master's students at large. Sixteen literature reviews were selected, evenly distributed between the treatment and control group. From the descriptive statistics reported, the effect size (Cohen's $d = 0.036$) indicated there was no difference between the students who used the rubric as a pedagogical tool to learn literature reviewing skills and those who did not. These findings failed to replicate the more robust findings in their previous study. Further work in the refinement of this particular literature review assessment rubric appears to have been abandoned as the broader education research community adopted the criteria from the Boote and Beile (2005) *Literature Review Scoring Rubric*.

Boote and Beile (2004) conducted a two-phase study using a stratified random sample of 10 dissertations from three different universities (a high ranking national

university, a high ranking regional university, and an unranked university), comprising 30 total dissertations. During the first phase, a citation analysis was conducted revealing that students at the lower ranked institutions did not rely on peer-reviewed sources as much as students from the higher ranked institutions, yielding lower overall citation analysis scores for the dissertations from lower ranked institutions. During the second phase of the research, Boote and Beile (2004) used a randomly selected sub-sample of 12 dissertations from the original 30, four from each of the three universities. They then assessed the “comprehensiveness and coherence” (p. 2) of the literature review chapters using the 12-criteria scoring rubric developed specifically for their study. This rubric was then published a year later as the *Literature Review Scoring Rubric* (see Boote & Beile, 2005.)

Boote and Beile (2004) found that the dissertations scored the lowest on the criterion related to rationalizing the inclusion and exclusion of literature in the review. Dissertations scored highest on the criterion pertaining to the acquisition and enhancement of vocabulary, placing the research in the historical context of the field, and in relation to articulating phenomena and variables that are important to the topic. It should be noted that the authors did not report any type of interrater reliability for the scoring rubric, leaving readers without any evidence of its reliability or validity. The variability in the range of scores from their study suggested that dissertation literature reviews were not held to consistent standards and many times, literature reviews were treated as having little importance. This finding is supported by Zaporozhcz's (1987) earlier research suggesting faculty do not always value the dissertation literature review.

Two studies have used the Boote and Beile (2005) *Literature Review Scoring*

Rubric as a framework for investigation. Fitt and colleagues (2008) used the rubric to assess a purposive sample of 15 dissertation literature reviews from Instructional Technology. The literature reviews came from dissertations at five universities with well-known departments of Instructional or Educational Technology. Department heads were asked to provide their “top” three dissertations for the previous two years. Using a similar protocol to Boote and Beile (2004) in which the reviews were scored independently and then met together for a consensus score, two graduate students scored the dissertation literature reviews. The results of the study supported Boote and Beile’s (2005) assertion that there is room for improvement of dissertation literature reviews in education research. The findings of this study must be tempered with the reality of the inadequate sampling methods and the fact the individuals scoring the dissertations were relatively inexperienced doctoral students.

During a semester long project that involved five master’s-level students in music education, Freer and Barker (2008) worked with the participants to adapt the Boote and Beile (2005) *Literature Review Scoring Rubric* for use on literature reviews in music education. This adaptation differs in three key ways. First, it weights criteria and performance levels. Second, in addition to the 12 criteria from the Boote and Beile *Literature Review Scoring Rubric*, it also has criteria focusing on “style” (feel, tone, sentence structure, word choice, grammar/spelling/writing mechanics) and “format” (length, citations within the paper, quality of references, and APA use). The third major difference is the assignment of a letter grade. This rubric was used to evaluate literature reviews in music education journals and as an instructional tool for writing their own

review of the literature.

As part of the research, Freer and Barker (2008) also administered surveys and conducted interviews at three different points in the semester to assess the changes in the graduate students' conceptions and views on the literature process and product. The graduate students' responses indicated that the process of examining the Boote and Beile (2005) *Literature Review Scoring Rubric* and adapting it to their discipline helped improve their ability to analyze reviews and increased their ability to conceptualize and write their own reviews of literature.

Caution must be exercised in comparisons among the rubrics (Boote & Beile, 2005; Freer & Barker, 2008; Green & Bowser, 2003, 2006). In addition to differences in target population, from master-level students (Freer & Barker, 2008; Green & Bowser, 2003, 2006) to doctoral students (Boote & Beile, 2005), there are differences in the underlying purpose of literature reviews. The Green and Bowser (2006) rubric tends to focus on information-seeking behaviors while the rubric used in the Boote and Beile (2004) rubric focuses on the second half of Cooper's definition of a literature review. With the addition of the criteria focusing on elements of style and format, the Freer and Barker rubric begins to bridge the divide between the normally dichotomous purposes of the dissertation literature review.

The Boote and Beile *Literature Review Scoring Rubric*

Prior to Boote and Beile's introduction of the 12-item *Literature Review Scoring Rubric* in 2005, Cooper's (1988) taxonomy was the single most pointed effort to move

towards a systematic way of assessing reviews of literature. The rubric signifies an important step forward in thinking about the form and functions of a dissertation literature review and represents an ambitious yet substantially sound synthesis of the many recommendations on improving literature reviews garnered from both leading journal editors and academicians.

The rubric is being incorporated into instructional interventions (Combs et al., 2010a; Mertens, 2009) and the criteria are being used to frame the rationale for doctoral reviews of literature in increasing numbers of dissertations in wide variety of fields such as human development (Greene, 2007), developmental coaching (Diehl, 2010), nursing (Grainger, 2008), counseling (Jourbert, 2008), sustainability studies (Pepper, 2007), ethics (Smith, 2009), and economics and tourism (Baggio, 2008). However, in spite of the ever-widening acceptance of the *Literature Review Scoring Rubric*, there is no published reliability data available. There is also a gap in the literature regarding the validity evidence for how the rubric is used and the content it intends to measure. Additionally, no studies have ever been conducted to determine if the criteria established by Boote and Beile (2004, 2005) for the doctorate in education research can or should be applied to other disciplines. Consequently, potential users are left little information to judge its overall quality and usefulness in their particular field of study.

In the development of new education research scholars, attention should be paid to what it means to be a scholar and how to develop their habits of the heart, mind, and hands (Golde, 2010; Olson & Clark, 2009; Shulman, 2005). Answering the call to improve the quality of education research, Boote and Beile (2005) created the *Literature*

Review Scoring Rubric to assess the skills future scholars are learning as exemplified in the dissertation literature review. The rubric begins to fill the gap between what graduate students need to know about the dissertation literature review (Green, 2009) and their advisors' ability to transmit to them the knowledge of how to write a literature review for a dissertation (Bruce, 1994b; Kamler & Thomson, 2006; Zaporozhetz, 1987).

Summary and Conclusions

From this review of literature about the dissertation literature review, several things become apparent. First, while some doctoral students are intentional learners in acquiring the skills needed to successfully review literature (Freer & Barker, 2008; Green, 2009), others indicate they have a need for more direction, insight, and feedback about how to craft their dissertation literature review, especially in determining the scope of the review (Bruce, 1992, 1994a; Hernandez, 1985; Nelson, 2007). Second, faculty and supervisors have differing opinions as to the importance of the literature review in the research process and how to evaluate the quality. While most agree the literature review is critical, some do not (Lovitts, 2007; Zaporozhetz, 1987). Additionally, some faculty note that they themselves lack skills to conduct their own literature reviews even though they feel they are able to mentor students adequately in conducting their reviews of literature (Zaporozhetz, 1987).

We also find there is a startling lack of understanding about the performance expectations of the dissertation literature review (Boote & Beile, 2005; Lovitts, 2007) and even disagreement about what the purpose of the dissertation literature review should be

(Boote & Beile, 2005, 2006; Maxwell, 2006). Accompanying this limited understanding is a small body of literature exploring the assessment of the dissertation literature review (Boote & Beile, 2004; Fitt et al., 2008; Green & Bowser, 2003, 2006). Missing from these few articles is information about the reliability and the validity of the rubric-based assessments tools they offer.

Aside from Onwuegbuzie and Leech (2005), empirical literature is also virtually silent in terms of assessing the quality of instructional materials used to teach literature reviewing skills to doctoral students. Even though many have made claims about the inadequate coverage of literature review skills in textbooks used by doctoral students, (Boote & Beile, 2005; Green, 2009; Jackson, 1980; Kamler & Thomson, 2006), there has been no systematic research done to investigate these claims. While Maxwell (2006) recommended looking to supplemental materials (i.e., Galvan, 2009; Pan, 2008), doctoral students are not generally exposed to resources other than their textbooks and typically must seek out these supplemental resources on their own (Green, 2009; Maxwell, 2006).

The next logical step is to begin to fill in the gap regarding what students are being taught about literature reviewing skills and to further investigate how these skills are assessed. The research in this dissertation uses the 12 performance criteria from the Boote and Beile (2005) *Literature Review Scoring Rubric* as a framework to investigate leading education research methods textbooks. Additionally, the Boote and Beile (2005) *Literature Review Scoring Rubric* is used to assess dissertations from a narrower field of study within education research, replicating the Boote and Beile (2004) study in an effort to add to the information about the reliability of the rubric as an assessment tool.

CHAPTER 3

DISSERTATION LITERATURE REVIEW SKILLS AND EDUCATION
RESEARCH METHODS TEXTBOOKS: AN INADEQUATE PEDAGOGY¹

Initial studies reveal problems with the quality of doctoral dissertation literature reviews in education research as measured by the Boote and Beile (2005) *Literature Review Scoring Rubric*. Specific problems include the level of synthesis of the literature reviews, inattention to the variables and phenomena related to the research topic and lack of justification for the inclusion or exclusion of literature from the review (Boote & Beile, 2004; Fitt et al., 2008). These findings are in keeping with what other scholars and researchers have found about the quality of literature reviews in education research journal articles (Lather, 1999; LeCompte et al., 2003; Onwuebuzie & Daniel, 2005). If students are expected to possess skills found in the Boote and Beile (2005) rubric, then a better understanding of what doctoral students are being taught in relation to those constructs is needed. The preparation of researchers during their doctoral studies is a key element to improving the quality of the reviews of literature in doctoral dissertations and subsequently, the research they undertake (Berliner, 2006; Golde, 2006; Golde & Walker, 2006; Richardson, 2006).

Johnsrud and Banaria (2004) argued that the quality of instruction impacts doctoral students' ability to conduct independent research. Consequently, understanding the types of instruction doctoral students are receiving about how to review literature is a primary component to exploring the quality of dissertation literature reviews. Most

¹ Co-authors: Dr. Joel Gardner, Dr. Kristy Bloxham. See Appendix D for permission from the authors to include their material in dissertation.

doctoral students are required to take an introductory education research methods course as part of their program of study (Mundfrom et al., 1998; Onwuegbuzie et al., 2001). During the course, they are exposed to some training about literature review skills through their required textbooks. Scholars assert that education research methods textbooks used in these courses place much more emphasis on literature review search techniques than they do on the process of writing well-crafted literature reviews (Boote & Beile, 2005; Dellinger, 2005; Jackson, 1980). The textbooks used in these courses provide an accessible pool of data about materials used to train doctoral students.

The purpose of this study was to understand what doctoral students are exposed to in education research textbooks pertaining to literature review skills. Specifically, the study sought to illuminate the relationship between the 12 criteria identified by Boote and Beile (2005) in their *Literature Review Scoring Rubric* and the content of the education research methods textbooks. The 12 criteria from the Boote and Beile rubric are:

- A. Justified criteria for inclusion and exclusion from the review.
- B. Distinguished what has been done in the field from what needs to be done.
- C. Placed the topic or problem in the broader scholarly literature.
- D. Placed the research in the historical context of the field.
- E. Acquired and enhanced the subject vocabulary.
- F. Articulated important variables and phenomena relevant to the topic.
- G. Synthesized and gained a new perspective on the literature.
- H. Identified the main methodologies and research techniques that have been used in the field, and their advantages and disadvantages.
- I. Related ideas and theories in the field to research methodologies.
- J. Rationalized the practical significance of the research problem.
- K. Rationalized the scholarly significance of the research problem.
- L. Was written with a coherent, clear structure that supported the review. (p. 8)

Review of Literature

During the past decade there has been an expanding awareness of how future scholars and researchers are formed (Evans, 2007; Golde, 2007, 2010; Koutsantoni, 2007; Olson & Clark, 2009; Shulman et al., 2006; Walker et al., 2008). With this awareness comes the criticism that programs sometimes fall short in preparing emerging scholars because they allow students to graduate without the necessary skills to work independently as a researcher (Berliner, 2006; Golde, 2006; Golde & Walker, 2006; Richardson, 2006). Indeed, evidence of this criticism can be found in the poor quality of journal articles that are frequently submitted by emerging scholars (Alton-Lee, 1998; Grant, 1999; Lather, 1999; LeCompte et al., 2003; Onwuegbuzie & Daniel, 2005). Specifically, Onwuegbuzie and Daniel asserted that 40% of the manuscripts submitted over a 2-year time period to a leading education research journal for publication had underdeveloped literature review sections with dated citations no longer supported by subsequent research.

As an artifact of doctoral students' training, the dissertation offers a unique insight into how well their authors are prepared to conduct research that is both warranted and sufficiently transparent (Kamler & Thomson, 2006). Specifically, the literature review within the dissertation should reflect the level of understanding students possess about their research area (Boote & Beile, 2004, 2005; Hart, 1998; Holbrook et al., 2007; Pan, 2008; Randolph, 2009). However, several studies have indicated that the quality of dissertation literature reviews in education research is generally low (Boote & Beile, 2004; Fitt et al., 2008).

Some believe that information in leading textbooks about the techniques, criteria, and process of writing well-crafted literature reviews is overshadowed by the emphasis placed on literature review search techniques (Boote & Beile, 2005; Dellinger, 2005; Green, 2009; Jackson, 1980; Onwuegbuzie & Leech, 2005). The study by Jackson examined a convenience sample of 39 education research textbooks for information about integrative reviews. Jackson found that only four textbooks provided any information about inclusion and exclusion criteria, only three discussed how to judge the quality of a study, and only two mentioned anything about synthesizing validity.

Further, a study of 17 education research textbooks by Onwuegbuzie and Leech (2005) revealed errors of commission and/or omission about literature reviews that may lead to misconceptions about reviewing literature. The errors include leading readers to think of reviews of literature as being neutral in viewpoint and failing to inform readers of the limitations of the review. While the data source for this study was similar to the Jackson and Onwuegbuzie and Leech studies, the use of the *Literature Review Scoring Rubric* (Boote & Beile, 2005) introduced a unique approach to analyzing the textbooks.

This current research is a direct answer to Boote and Beile's (2005) call to extend research on doctoral students and literature review skills from anecdotal reports to recommendations based on systematic investigation. The 12 criteria from the *Literature Review Scoring Rubric* are built on a foundation of specific recommendations from editors about improving the quality of literature reviews in education research (Lather, 1999; LeCompte et al., 2003) and global criteria for reviewing literature (Hart, 1998). The following question guided the content analysis of the textbooks, "How well do the

top selling textbooks in introductory education research classes address the 12 literature review skills criteria as outlined in the Boote and Beile (2005) *Literature Review Scoring Rubric*”?

Methods

Sampling Criteria

A purposeful sample of the leading education research textbooks in the United States was used for this study (Krippendorff, 2004; Neuendorf, 2001; Weber, 1990). To locate the textbooks used in this review, the sales and usage database for Faculty Center (www.facultycenter.net), a national clearinghouse for university bookstores, was consulted. From the annual book orders, the clearinghouse calculated the overall demand for each textbook & the percentage of universities that adopted the textbook for use. The search terms used to locate books within the clearinghouse website were combinations of the words *introduction*, *education research*, *educational research*, and *methods*.

The FacultyCenter.net clearinghouse provided a ranking for each textbook. The rankings, which range from 0 to 5, are a reflection of the history of the demand for a particular textbook from 3,600 active wholesale bookstore accounts during the twelve months from January 2010 to December 2010. A ranking of five represents the 98.7th percentile and above in demand based on order histories; a four represents the range between the 95.5th and 98.7th percentile; a three represents the range between the 87.0th and 95.5th percentile; a two represents the range between the 63.6th and 87.0th percentile; a one represents the range from 0 to the 63.6th percentile; a 0 means there were quotes

only and no orders placed for the textbook. If a university bookstore ordered more than five textbooks in the previous 12 months, the school was categorized as having adopted the text.

To obtain the percentage of schools adopting a particular textbook, the FacultyCenter.net clearinghouse divided the total number schools adopting a book by the number of schools represented. The FacultyCenter.net clearinghouse also lists each individual school that adopted a particular textbook although it does not specify which course it is used for. However, it can be safely assumed that introductory education research textbooks are used in courses that teach this material.

Using the rating system to determine demand and adoption of textbooks, only textbooks ranking in the top 87th percentile and above in demand were selected for use in this review. The percentile cutoff was chosen as it reflects the ranking system developed by the university bookstore clearinghouse. This represents 81% of the approximately 200 universities in the United States that offer a doctoral degree in education. Table 3.1 displays the seven textbooks that met the inclusion criteria, as well as their demand ranking and the percentage of the universities offering a doctoral degree in education that adopted the textbook.

Once textbooks were selected, the indices of the textbooks were searched to locate any content pertaining to the following words: *literature review*, *reviewing the literature*, *problem statement*, *research problems*, *research identification questions*, *research identification*, *research value*, *topic definition*, and *problem*. The relevant chapters and sections were then converted to PDF format for use in the coding procedures.

Table 3.1

Most Frequently Used Introduction to Education Research Textbooks

Author(s)	Title	Clearinghouse rating	% using textbook
Ary, Jacobs, & Sorensen (2009)	Introduction to research in education (8 th ed.)	3	7
Creswell (2008)	Educational research: Planning, conducting, and evaluating quantitative and qualitative research (3 rd ed.)	4	16
Fraenkel & Wallen (2008)	How to design and evaluate research in education (7 th ed.)	4	15
Gall et al. (2007)	Educational research: An introduction (8 th ed.)	3	11
Gay, Mills & Airasian (2009)	Educational research: Competencies for analysis and applications (9 th ed.)	5	17
Johnson & Christensen (2008)	Educational research: Quantitative, qualitative, and mixed approaches (3 rd ed.)	3	5
McMillan (2008)	Educational research: Fundamentals for the consumer (5 th ed.)	3	10

Data Collection and Analysis

To answer the research question, three evaluators analyzed the relevant textbook sections using the coding sheet developed for this study by the lead researcher (see Appendix A). Two of the evaluators held PhDs in Instructional Technology and Learning Sciences. The third evaluator was a doctoral candidate nearing the completion of her degree. The 12 criteria for the coding were adapted from Boote and Beile's (2005) *Literature Review Scoring Rubric*. All three evaluators had extensive experience using the rubric in applied settings. The coding units (Lawshe, 1975; Krippendorff, 2004) were syntactically defined as sentences, starting with a capitalized letter and ending with a punctuation mark. The coverage rating levels were developed and refined during a pilot study.

Each textbook was analyzed and then assigned a “coverage rating” of 0, 1, 2, or 3 for each individual criterion. As the coverage ratings are ordinal data, the means and SDs are not useful indicators of central tendency (Cohen, 2007; Dooley, 2000). Therefore the results were tabulated and the mode for each criterion was reported. If there was no mention of the criterion in the pages analyzed, the textbook received a coverage rating of zero. If there was at least one sentence but less than three referring to a criterion, the textbook received a score of 1. For example, a coverage rating of 1 for criterion (A) “Justify criteria for inclusion and exclusion from review” (Fraenkel & Wallen, 2008, p. 620). “In our experiences, the major weakness of many literature reviews is that they cite references (often many references) without indicating their relevance or implications for the planned study.”

If there were at least three or more sentences about a criterion the textbook received a score of two. These three sentences did not need to be contiguous to receive this coverage rating. Creswell (2008) provided an example of what a textbook receiving a coverage rating of two for criterion (A) would look like. “Whether a source is high quality and worthy of inclusion in a literature review is one consideration” (Creswell, 2008, p. 104) and

Realize that not every source you locate may provide relevant information for your literature review. To determine which to use, remember these four criteria: the relevance of the topic, the individuals or sites, the problem, and the accessibility of the information. (Creswell, 2008, p. 117)

When the textbook not only mentioned the criterion (no matter how many sentences), but also presented at least one example on how the criteria might be implemented in a review of literature, the textbook received a coverage rating of three. An example of a textbook

earning a coverage rating of three for criterion (A) is Gall and colleagues (2007). The authors provide an example of how to justify the inclusion and exclusion of studies in qualitative research by using an audit trail to record the decisions and processes used in determining which studies to include. “If such an account is included in the report of the review of literature, readers can understand more fully how the review was done and can replicate the review, if they wish” (Gall et al., 2007, p. 118) They go on to say, “You should include documents about the phenomena that correspond to your definition and exclude documents that do not” (p. 119).

The intercoder reliability of first pass scores was measured using Krippendorff’s alpha (Krippendorff, 2004). Typically used for content analyses, Krippendorff’s alpha (α) can handle multiple coders, nonparametric data, multiple forms of data, can correct for missing data, and is not adversely affected by small sample sizes (Krippendorff, 2003, 2004). The range of the scale is typically 0 to -1, where 1 indicates perfect agreement and negative values suggest systematic disagreement (Krippendorff, 2004). There “is no magical number” (Krippendorff & Bock, 2008, p. 354) for the lowest acceptable cut off when using Krippendorff’s alpha (α). The purpose of the analysis and the decisions that may rest upon the results are used to set the lower limits. As the purpose of this study was to support scholarly explorations, lower limits are acceptable to draw tentative conclusions (Krippendorff & Bock, 2008). After the independent first-pass coding, the coders met together to come to a consensus on final coverage ratings. As the coverage rating scale is ordinal, the mode of the individual textbook scores for each criterion was reported. Finally, an overall score was calculated and each textbook was given a letter

grade based on the percentage out of 36 possible points.

Results

Intercoder Reliability

Three coders analyzed the textbooks ($N = 7$) for the reliability sample. The coders were already familiar with the criteria from the *Literature Review Scoring Rubric* (Boote & Beile, 2005), having used it to evaluate fifteen or more doctoral dissertations each. Coders underwent approximately 2 additional hours of training to become familiarized with the scoring sheet and coverage rating scale (Appendix A), and then coded each textbook independently. As this analysis used non-parametric data and multiple coders, Krippendorff's alpha (α) was calculated for overall ratings from the first pass analysis scores. The values are shown in Table 3.2. The findings reveal that overall Krippendorff's alpha (α) was moderate at .57. In an effort to highlight sources of low inter-rater reliability, alphas were also calculated for each criterion. Criterion alphas ranged from a low of .18 to a high of .97.

Discrepancies in first-pass scoring were typically due to individual coders missing the evidence supporting the coverage rating as opposed to true disagreement over coverage rating. However, criteria J ($\alpha = .18$) and K ($\alpha = .24$) were notable exceptions to this. Disagreements with these criteria were typically due to interpretations of the text or differences of opinion about how to apply the coverage rating rather than a coder who missed the evidence.

Table 3.2

Descriptive Statistics for First Pass Scores by Criteria²

Criteria	Min	Max	Mode	Number at Mode	Krippendorff's alpha
A) Justified criteria	0	3	3	9	.79
B) Distinguish what has/hasn't been done	0	3	3	10	.39
C) Place topic in broader literature	0	3	2	8	.37
D) Place topic in historical context	0	3	0	15	.63
E) Subject vocabulary	0	3	0	12	.94
F) Articulate variables	0	3	3	9	.28
G) Synthesize literature	0	3	3	13	.52
H) Identify main methodologies	0	3	3	15	.44
I) Relate ideas to methods	0	3	0	7	.63
J) Practical significance	1	3	2	8	.18
K) Scholarly significance	0	3	2	9	.24
L) Structure supports review	0	3	3	12	.97

Consensus Coverage Score and Overall Grade

Table 3.3 displays the consensus scores for the criterion coverage for each textbook as well as the overall score for each textbook. Criteria A, B, F, G, H, I, and L all had a mode of three, meaning the most frequently occurring type of coverage within the textbooks provided an example. Criteria J and K had a mode of 2, indicating the most frequently occurring of type coverage had at least three sentences pertaining to the criterion but did not provide an example. C, D, E all had a mode of 0, meaning these criteria had no coverage as the most frequent rating given. Criterion G and H both had six textbooks for the mode, which was 3. This means that six of the textbooks provided

² There were three raters and seven textbooks, resulting in 21 reported first-pass scores for each criterion.

Table 3.3

Individual Textbook Consensus Coverage Scores by Criteria

Criteria	Gall et al. (2007)	McMillan (2008)	Gay et al. (2008)	Creswell (2008)	Ary et al. (2009)	Fraenkel & Wallen (2008)	Johnson & Christensen (2008)
A. Justified inclusion and exclusion criteria	3	3	3	2	1	1	0
B. What has been done, what needs to be done	3	3	3	3	2	3	2
C. Place topic in broader scholarly literature	3	2	0	3	2	0	0
D. Placed research in historical context	1	3	0	0	0	0	0
E. Acquired-enhanced subject vocabulary	2	0	3	0	0	3	0
F. Articulated important variables relevant to topic	3	1	1	3	3	0	3
G. Gained new perspective on the literature	3	3	3	3	2	3	3
H. Advantages/disadvantages of main research methods	3	3	3	3	3	1	3
I Related ideas/theories in field to main research methods	3	3	3	0	1	0	1
J. Identified practical significance of research problem	3	3	2	3	2	2	2
K. Identified scholarly significance of research problem	3	3	2	3	2	2	2
L. Writing coherent w/clear structure to support review	3	3	3	3	2	3	0
Total	33	30	26	26	20	18	16

examples about each of these criteria. The following are the results for each criterion.

(A) *Justify criteria for inclusion and exclusion from review.* When analyzing the textbooks for this criterion, the coders looked for instances referring specifically to justifying the articles, reports, and so forth, used in the review of literature. This criterion had the widest dispersion of coverage ratings of all the criteria. In 2010, 5% of doctoral granting institutions in the U.S. used a textbook that made no mention of justifying the

inclusion or exclusion of studies from a review of literature (Johnson & Christensen, 2008). Two textbooks (Ary et al., 2009; Fraenkel & Wallen, 2008) had at least one but fewer than three sentences regarding this criterion. This represents 22% of the doctoral granting institutions in the U.S. during 2010. Sixteen percent of the doctoral granting institutions used a text in which there were at least three sentences, but in which no examples were given (Creswell, 2008). However, 38% of the doctoral granting institutions used textbooks that provided at least one example of how to implement this criterion in the review of literature (Gall et al., 2007; Gay et al., 2009; McMillan, 2008).

(B) Distinguish what has been done in the field from what needs to be done. For the purposes of the analysis, the coders searched for any occurrence of discussion regarding the need to identify what has been done from what needs to be done in the research about a topic or problem. In regards to this criterion, 69% of the doctoral granting institutions in the U.S. used a textbook that had at least one example of how to incorporate this criterion into the review of literature (Creswell, 2008; Fraenkel & Wallen, 2008; Gall et al., 2007; Gay et al., 2008; McMillan, 2008). Twelve percent of doctoral granting institutions in the U.S. used textbooks with at least three sentences relating to distinguishing what has been done from what has not been done in the field but did not present any examples (Ary et al., 2009; Johnson & Christensen, 2008).

(C) Place the topic or problem in the broader scholarly literature. The coders searched for any instance that instructed the students to place the topic of the literature review in context of the broader field. For example, a meta-analytic dissertation of cognitive outcomes for problem-based learning should discuss how problem based

learning fits with related instructional approaches, such as inquiry or project-based learning. In addition, it should examine related methodological approaches like meta-analysis and discuss how it relates to other approaches for synthesizing literature, such as narrative reviews. Fully 37% of doctoral granting institutions in the U.S. used textbooks with no information in relation to this criterion (Fraenkel & Wallen, 2008; Gay et al., 2009; Johnson & Christensen, 2008). Textbooks used by 17% of the doctoral granting institutions in the U.S. had at least three sentences but no examples (Ary et al., 2009; Johnson & Christensen, 2008), while 27% used a textbook that had at least one example of incorporating the research problem within the broader scholarly landscape (Creswell, 2008; Gall et al., 2007).

(D) Place the research in the historical context of the field. In determining the coverage ratings for this criterion, the coders gave credit if the authors of each textbook simply discussed including the history of the topic in very general terms, such as summarizing a long period of time. However, even with this generous interpretation of the criterion, it continues to be problematic since 60% of doctoral granting institutions in the U.S. used education research methods textbooks that did not mention placing the research within the historical context of the field (Ary et al., 2009; Creswell, 2008; Fraenkel & Wallen, 2008; Johnson & Christensen, 2008; Gay et al., 2009); another 11% used a textbook with two or fewer sentences referencing the historical perspective and context of the field (Gall et al., 2007). This means that 71% of doctoral granting institutions in the U.S. offering education research methods courses use textbooks that have little, if any direction about this criterion. Only 10% of the doctoral granting

institutions in the U.S. use education research methods textbooks that provided an example of how to situate the research topic within the historical context of the field in a review of literature (McMillan, 2008). The fact that a large number of textbooks do not mention this criterion may be the result of some authors considering the history of a field to be closely related to the broader landscape of the research topic (criterion C) and therefore they did not specifically cover it.

(E) Acquire and enhance the subject vocabulary. When analyzing texts for this criterion, coders did not count any references to “search terms” in relation to this criterion. Words had to specifically refer to key terms or vocabulary for the research topic in order to be counted. Acquisition and enhancement of the vocabulary was not discussed in textbooks used by 38% of doctoral granting institutions in the U.S. (Ary et al., 2009; Creswell, 2008; Johnson & Christensen, 2008; McMillan, 2008). One textbook used by 17% of doctoral granting institutions in the U.S. (Gall et al., 2007) contained at least three sentences but no example. Only 32% of doctoral granting institutions in the U.S. use an education research method that provided an example of what it meant to acquire the vocabulary, typically by suggesting that authors of literature reviews should provide definitions of key terms and concepts related to their research topic (Fraenkel & Wallen, 2008; Gay et al., 2009).

(F) Articulate important variables and phenomena relevant to literature. For the purpose of this analysis, coders searched for instances where the authors of the textbooks referred to the phenomena and variables specifically related to the review of literature, not the identification of variables for the methodology and research design. Almost half

(49%) of the doctoral granting institutions in the U.S. used education research methods textbooks containing at least one example of how to implement this criterion in their review of literature (Ary et al., 2009; Creswell, 2008; Gall et al., 2007; Johnson & Christensen, 2008; McMillan, 2008), while 15% used a textbook that did not refer to this criterion at all (Fraenkel & Wallen, 2008). Seventeen percent of doctoral granting institutions in the U.S. used a textbook that only had two sentences in regards to this criterion (Gay et al., 2009).

(G) Synthesize and gain a new perspective on the literature. In regards to this criterion, coders looked for any of the variety of ways to synthesize literature, from a meta-analysis to a vote-count to tabulating findings. Narrative synthesis of qualitative literature was also included for the purpose of determining coverage ratings. This criterion had the highest number of textbooks receiving a coverage rating of “three,” meaning they provided an example of how to synthesize the literature (Creswell, 2008; Fraenkel & Wallen, 2008; Gall et al., 2007; Gay et al., 2008; Johnson & Christensen, 2008; McMillan, 2008). This means 74% of doctoral granting institutions in the U.S. used a textbook with at least one example on how to implement this criterion. The remaining textbook (Ary et al., 2009) was used by 7% of doctoral granting institutions in the U.S. and had at least three sentences dealing with the synthesis of the literature used in the review but provided no example.

(H) Identify the main methodologies and research techniques that have been used in the field and their advantages and disadvantages. In regards to this criterion, coders searched for instances specifically about the methodologies of previous related

studies or studies with similar research questions. This criterion is not about the methods section of a research report. All of the textbooks contained at least some mention of identifying the main methods and techniques used to answer the research problem. However, 15% of doctoral granting institutions in the U.S. used an education research textbook that had only one or two sentences about this criterion (Fraenkel & Wallen, 2008). Seven percent of doctoral granting institutions in the U.S. used an education research methods textbook that had at least three sentences (Ary et al., 2009). A majority of doctoral granting institutions in the U.S. (66%) used textbooks that discussed how to identify methods and techniques, but also included examples of how to include this in the review of literature (Ary et al., 2009; Creswell, 2008; Fraenkel & Wallen, 2008; Gall et al., 2007; Gay et al., 2009; Johnson & Christensen, 2008; McMillan, 2008).

(I) Relate ideas and theories in the field to research methodologies. When analyzing the textbooks for this criterion, coders searched for any instances referring specifically to relating the literature review topic to the ideas and theories identified in the review. In regards to criterion (I), 31% of doctoral granting institutions in the U.S. used an education research methods textbook that made no mention of connecting methodologies with ideas and theories from the field of the research topic (Creswell, 2008; Fraenkel & Wallen, 2008); 12% of students used a textbook with two or fewer sentences about the criterion (Ary et al., 2009; Johnson & Christensen, 2008). Thirty-eight percent of students used a textbook which provided an example on how to relate methods to the theories and ideas (Gall et al., 2007; Gay et al., 2009; McMillan, 2008).

(J) Rationalize the practical significance of the research and (K) Rationalize the

scholarly significance of the research. When analyzing text for this criterion, coders looked for any references to using the findings from the literature review to justify the practical or scholarly significance of the research topic. The analysis revealed all of the textbooks contained at least a mention of justifying the significance of the research problem within the review of literature. These two criteria were always mentioned in conjunction with each other and thus they are grouped together for the purpose of this discussion. In regards to these criteria, 15% of doctoral granting institutions in the U.S. used an education research methods textbook that provided one or two sentences about the types of significance (Fraenkel & Wallen, 2008). Twenty-nine percent of doctoral granting institutions in the U.S. used a textbook that had three or more sentences but contained no examples of how to justify the significance of the research topic (Ary et al., 2009; Gay et al., 2009; Johnson & Christensen, 2008). Textbooks used by 37% of doctoral granting institutions in the U.S. also provided an example (Creswell, 2008; Gall et al., 2007; McMillan, 2008).

(L) Write the review using a coherent, clear structure that supports the review.

In determining the coverage ratings for this criterion, coders examined the textbooks for any reference to the sequencing of articles in a written review, rhetorical devices to be used, and information on how to actually write the review of literature. Sixty-nine percent of doctoral granting institutions in the U.S. used an education research methods textbook with at least one example of writing the review using a clear structure supported by the literature (Creswell, 2008; Fraenkel & Wallen, 2008; Gall et al., 2007; Gay et al., 2009; McMillan, 2008). Seven percent of doctoral granting institutions in the U.S. used an

education research methods textbook with at least three sentences about this criterion but no example (Ary et al., 2010); 5% use a textbook that does not provide any information regarding how use the reviewed literature to support a clear and coherent picture (Johnson & Christensen, 2008) has at least three sentences.

Overall Textbook Scores

Gall and colleagues (2007) had the highest score of 33 out of 36 while Johnson and Christensen (2008) had the lowest score at 16 out of 36. Two textbooks (Creswell, 2008; Gay et al., 2009) received the same score of 26 out of 36. Three textbooks (Ary et al., 2009; Fraenkel & Wallen, 2008; Johnson & Christensen, 2008) all scored below 20 out of 36 possible points. Table 3.4 displays the textbooks overall score and grade in order of demand as determined by Faculty Center. It should be noted the score and grade for the coverage of the literature review criteria as specified by the Boote and Beile (2005) *Literature Review Scoring Rubric* in no way reflects the overall quality of the textbook as a whole.

Figure 3.1 shows a visual representation of the percentage of universities that grant doctorates in education in United States that adopted the particular textbook in 2010. The size of the circles represents the percentage in relation to the other textbooks. By adding all the percentage points together for each grade, we find 27% of doctoral granting institutions in the United States are using textbooks that receive a failing grade of F, scoring 59% or below (Ary et al., 2009; Fraenkel & Wallen, 2008; Johnson & Christensen, 2008). The figure also reveals 33% are using textbooks that scored 72.2% and received a grade of C- (Creswell, 2008; Gay et al., 2008). Just 10% of doctoral

Table 3.4

Total Coverage Score and Overall Grade for Top Textbooks

Author(s)	FacultyCenter.Net rating	Coverage (out of 36)	% of total	Overall grade	% of institutions using text
Gay et al. (2009)	5	26	72.2%	C-	17
Creswell (2008)	4	26	72.2%	C-	16
Fraenkel & Wallen (2008)	4	18	50.0%	F	15
Gall et al. (2007)	3	33	91.6%	A-	11
McMillan (2008)	3	30	83.3%	B	10
Ary et al. (2009)	3	20	55.5%	F	7
Johnson & Christensen (2008)	3	16	44.4%	F	5

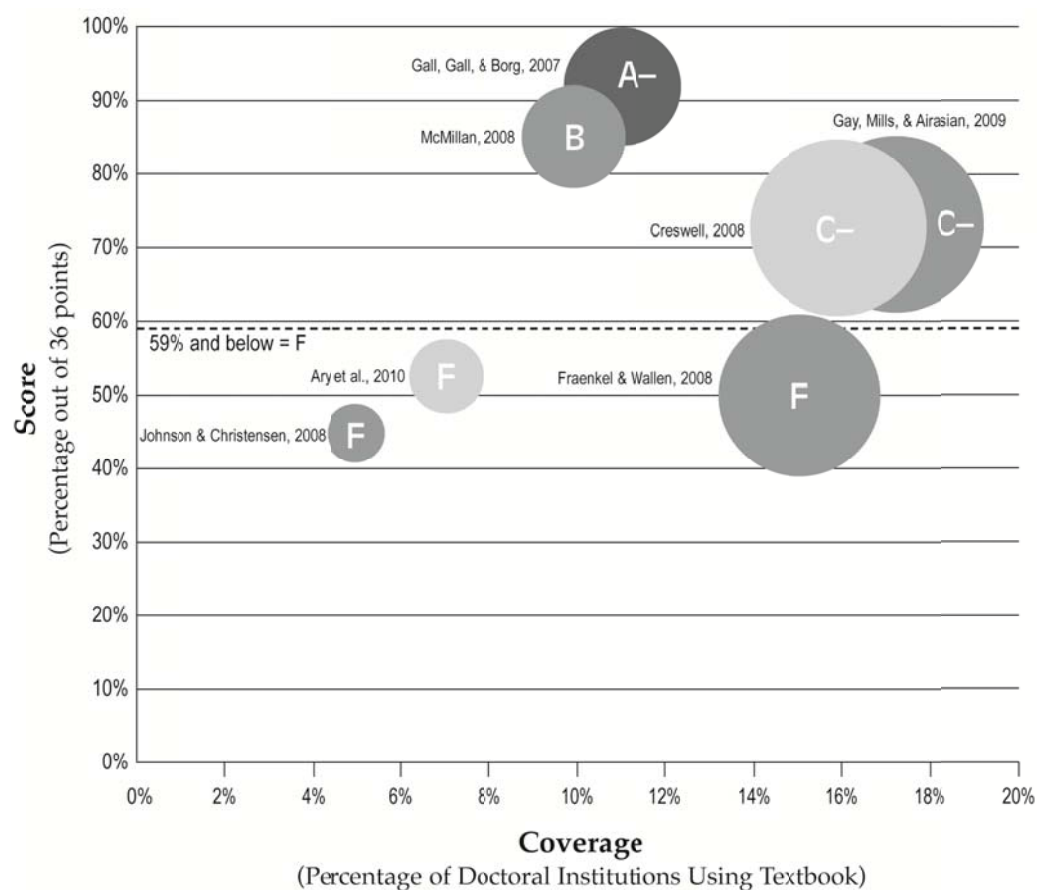


Figure 3.1. Textbook grades and percentage of doctoral granting institutions in the United States who adopted the textbook for use in coursework.

granting institutions in the United States are using a textbook that received a B (McMillan, 2008) and only 11% are using a textbook receiving an A- grade (Gall et al., 2007).

Discussion

The discussions of the results are necessarily tied back to the coverage ratings system used to evaluate the textbooks and the percentage of doctoral granting institutions in the United States using each textbook as measured by Faculty Center methods. The coverage rating system used to analyze and score the textbooks was based on an ordinal scale, and as such does not measure the relative magnitude of the differences between the different levels. Thus, when two different textbooks received a coverage rating of three, the coders did not distinguish between the quality or number of examples given, simply that there was at least one example provided on how to implement the criterion in a review of literature. In regards to the percentage of institutions adopting a particular text, it must be noted that the textbooks used in this analysis represent 81% of all doctoral granting institutions in education research during 2010, not the entire population.

To answer the original research question of how well the leading textbooks in education research cover the criteria identified by Boote and Beile (2005), the results of this study indicate some leading textbooks cover the criteria very well (i.e., Gall et al., 2007; McMillan, 2008) and some not at all (i.e., Ary et al., 2009; Fraenkel & Wallen, 2008; Johnson & Christensen, 2008).

This study supports the assertion that many of the leading textbooks spend a great deal of time discussing how to search for literature and less about how to synthesize and

write a sophisticated and carefully crafted review (Boote & Beile, 2005; Dellinger, 2005; Jackson, 1980). While six out of the seven textbooks were given a coverage rating of three for criterion (G) “Synthesize and gain a new perspective on the literature,” the following must be taken into consideration. According to the coding rules, meta-analysis was coded as a method of synthesizing the literature and therefore met this criterion. This means if a textbook mentioned meta-analysis and offered one example, it received a coverage rating of three even if the textbook provided *no* other suggestions for synthesizing findings.

An example of this is found in Fraenkel and Wallen (2008). This textbook was given a coverage rating of three for criterion (G) for a short, three-sentence example of synthesizing studies reporting similar results by referring to them in one sentence. However, 16 of the 22 pages from the literature review chapter are devoted entirely to developing search terms and search strategies, specific instructions about searching databases, screen shots of various databases and how to create note cards to record information from the literature. Other textbooks devoted similar amounts of space to the search for literature as well. A notable exception to this trend was Gall and colleagues (2007) who dedicated seven pages to the explanation and examples of various methods of synthesizing both qualitative and quantitative research.

Intercoder Reliability

The overall reported intercoder reliability rating is moderate ($\alpha = .57$). However, this intercoder reliability rating is not entirely problematic as the alpha was calculated using first-pass scores but the final textbooks scores were arrived upon after consensus

was achieved among the three coders. Many of the original discrepancies between coder scores were the result of human error (i.e., one or more of the coders missed a section of the textbook that qualified for certain coverage rating). Additionally, the purpose of this research is scholarly exploration and therefore can tolerate a lower acceptable limit (Krippendorff & Boch, 2008).

The lower overall alpha may also be due to the coding scheme itself, with some of the criterion being closely related in nature thus rendering the items more difficult to categorize during the analysis. For example, criterion (J) “Rationalize the practical significance of the research” ($\alpha = .18$), and (K) “Rationalize the scholarly significance of the research” ($\alpha = .24$) are associated constructs and “significance” is frequently discussed in more general terms. The intercoder reliability for criterion (B) “Distinguish what has been done in the field from what needs to be done” ($\alpha = .39$) and (C) “Place the topic or problem in the broader scholarly literature” ($\alpha = .37$) bear a similar relationship in that the underlying constructs of each criterion are related. These low intercoder reliability levels may limit the chance the results are valid (Krippendorff, 2004) and indicate a need for better coder training (Neuendorf, 2002). However, these lower levels are also tempered by the acknowledgement of the nature of the disagreements, therefore the reliability standards may be relaxed (Krippendorff, 2004; Krippendorff & Boch, 2008).

Criterion Ratings

The large number of textbooks providing an example on how to implement criterion (B) “Distinguish what has been done in the field from what needs to be done” is

not surprising, as this is a key step in identifying a research problem (Ary et al., 2009; Fraenkel & Wallen, 2008; Johnson & Christensen, 2008). In addition to criterion B, G, (H) “Identify the main methodologies and research techniques that have been used in the field, and their advantages and disadvantages” are critical elements to the research process and as such, should be well covered in a review of literature (Dooley, 2000; Galvan, 2009; Mertens, 2009; Pan, 2008).

Of the seven textbooks, five did not mention criterion (D) “Place the research in the historical context of the field.” This may be in part because some consider the history of a field to be closely related to the broader landscape of the research topic (criterion C) and therefore did not specifically cover it as a separate area of concern in a literature review. Another area of weakness is criterion (E) “Acquire and enhance the subject vocabulary.” This may be because the acquisition of the vocabulary is sometimes covered in the introduction section of a proposal or report and not necessarily in the literature review section.

The criteria with the highest alphas were (A) “Justify criteria for inclusion and exclusion from review” ($\alpha = .79$), (D) “Place the research in the historical context of the field” ($\alpha = .63$), (E) “Acquire and enhance the subject vocabulary” ($\alpha = .94$), (I) “Relate ideas and theories in the field to research methodologies” ($\alpha = .63$), and (L) “Write the review using a coherent, clear structure that supports the review” ($\alpha = .97$). The extremely high alphas of criteria (E) “Acquire and enhance the subject vocabulary” ($\alpha = .94$) and (L) “Write the review using a coherent, clear structure that supports the review” ($\alpha = .97$) indicate these criteria were the most easily recognized by the coders.

Individual Textbook Scores

The highest scoring textbook, Gall and colleagues (2007), received a grade of A- for their coverage of the criteria from the *Literature Review Scoring Rubric*. This high grade may be partially explained by the emphasis throughout the chapter on writing a review for a dissertation proposal as opposed to a more generalized approach to reviewing the literature. Conversely, none of the three texts that received grade of “F” for their coverage the criteria from the *Literature Review Scoring Rubric* (Ary et al., 2009; Fraenkel & Wallen, 2008; Johnson & Christensen, 2008) gave any specific direction or advice about a dissertation literature review. The remaining textbooks tended to focus on the general purposes of literature reviews as opposed to the more extensive requirements (Boote & Beile, 2005; Hart, 1998, 2001; Randolph, 2009) of a dissertation review.

Limitations of the Study

A potential limitation of this study is that the criteria used to analyze the education research methods textbooks were drawn from a scoring rubric specifically for the dissertation literature review. As some have noted (Boote & Beile, 2005; Green, 2009; Zaporozhietz, 1987), dissertation literature reviews have somewhat more rigorous standards and serve a slightly different purpose than literature reviews that precede a research article or study proposal. Indeed, three of the textbooks did not mention reviewing the literature for a dissertation (Ary et al., 2009; Creswell, 2008; McMillan, 2008), however four of the textbooks did mention it but in limited ways (Ary et al., 2009; Creswell, 2008; McMillan, 2008). For example, the sum total of advice given about the nature of review of literature for dissertations in one textbook is “However, exhaustive

reviews may be necessary for theses, dissertations, and other major projects...an exhaustive review in a thesis or dissertation can be as long as 30 or 40 typed pages” (McMillan, 2008, p. 71). Another textbook fared marginally better with these 45 words of advice.

This chapter contains an extensive review of the literature related to your problem. Do not just list studies one after the other but, rather, synthesize their findings and point out agreements and disagreements among them. Also, show how they are related to your research problem. (Ary et al., 2009, p. 607)

This may be because these texts are not specifically geared towards advanced level doctoral students who are preparing reviews for a dissertation but are used in introductory education research classes for both doctoral and masters’ level students.

This study is limited by the size of the sample. However, the smaller n is justified in that the vast majority (81%) of doctoral students in the United States will use at least one of these textbooks within their required coursework. Further, this study is limited somewhat by the fact there is no published evidence to date supporting the validity of the constructs contained within the Boote and Beile (2005) *Literature Review Scoring Rubric*. This may mean the framework used to guide the analysis may not entirely represent the skill set needed to conduct sophisticated and skillful literature reviews in doctoral dissertations. Low intercoder reliability for first-pass scores is also a limitation for this study; however, the final textbook scores are based on a consensus agreement between the three coders so the findings are reasonably sound.

Another limitation of this study is the coding instrument and coverage ratings. Due to the ordinal nature of the ratings, the textbooks scores may be overinflated. While some criteria appear to be covered well in the textbooks because a high number of texts

were given a coverage rating of three, this may in fact not be an entirely accurate how well it is covered. The reason for this is due to the coverage rating scale: to earn a three, a textbook needed only one example no matter the length or quality. Consequently, textbooks with a single poor example received the same rating as textbooks providing multiple good examples. This rigidity in the coding scheme may also be a reason for some of the low reliability scores. Future research should employ a coding scheme with a more open format.

Significance of Study

This study is unique in that it is the first time the congruency between the assessment criteria of *Literature Review Scoring Rubric* (Boote & Beile, 2005) and leading textbooks has been analyzed. Future research should feature studies that clarify the purpose and performance expectations of the dissertation literature review and include a replication of this study using texts specifically geared towards advanced doctoral students. Other efforts should include the identification and evaluation of other supplemental materials for the use of instructors who have adopted the textbooks in this study. Additionally, studies investigating the needs of doctoral students are important to furthering the understanding of what tools and techniques would be most useful to assist them in the acquisition of the skills needed to conduct the a sophisticated and well-constructed (Boote & Beile, 2005) dissertation literature review.

To the practicing educator, study results may help guide the selection of a textbook for use in teaching literature review skills called for by editors and seasoned

researchers alike. The results may influence how introduction to education research courses are structured, allowing for more in-depth instruction of skills not covered within the textbooks. The results represent a first step to finding a solution to improving research and synthesis skills of emerging scholars. Finally, potential findings may assist faculty in making more informed decisions about graduate education curriculum and instruction issues pertaining to training new scholars in education research.

CHAPTER 4
ASSESSING THE QUALITY OF DOCTORAL DISSERTATION LITERATURE
REVIEWS IN INSTRUCTIONAL TECHNOLOGY³

The doctoral dissertation is the culminating written assessment of a PhD candidate's educational experience. As part of the doctoral dissertation, the literature review provides a unique vantage point to examine the overall quality of a student's preparation for future work as an independent researcher. It is an indicator of their ability to critically analyze their research area, seek out new relationships between seemingly unconnected phenomena, resolve ambiguities, frame their own research and pose timely research questions. While little work has been done on other components of a dissertation, there is small but growing body of literature emerging on the assessment of the doctoral literature review (see Boote & Beile, 2004, 2005; Hart, 1998; Holbrook et al., 2007) as well as students' perception, experiences with, and understanding of dissertation literature reviews (see Bruce, 1994b, 2001; Nelson, 2007).

Boote and Beile's (2004, 2005) important research about the quality of literature reviews in doctoral dissertations utilizes the *Literature Review Scoring Rubric*, which they created. Initially used to evaluate literature reviews of doctoral dissertations in education as a broad field, it is now being applied in areas of inquiry such as nursing (Bowman, 2007), music (Freer & Barker, 2008), information systems (Levy & Ellis, 2006), and the teacher professional continuum (Stuessy, 2007). It has also been used to guide the development of a survey for graduate students' perceptions of their preparation

³ Co-authors: Dr. Andrew Walker, Dr. Heather Leary. See Appendix D for permission from the authors to include their material in dissertation.

for conducting literature reviews for their thesis or dissertation (Nelson, 2007). However, Boote and Beile (2005) applied their rubric to dissertations from the field of education, and only Chapter 2 of the dissertation, the chapter that traditionally contains the literature review. Additionally, their stratified random sampling process yielded only quantitative dissertations. It remains to be seen if the rubric works well for specific fields of inquiry within education and qualitative or mixed-methods designs, and if examining the entire dissertation as opposed to the literature review alone impacts the score. Finally, while the rubric has been used, its reliability has not been assessed when used by evaluators other than the original authors of the rubric.

To that end, the purpose of this work is to extend the work of Boote and Beile (2005) by (a) applying the *Literature Review Scoring Rubric* to a more narrow field of inquiry within education research, (b) evaluating each dissertation based on chapter 2 alone and the entire work, (c) examining dissertations that incorporate a range of methodologies, specifically qualitative, mixed-methods, and quantitative (d) analyzing the inter-rater reliability of the Boote and Beile rubric.

Review of Literature

Several initiatives, such as the Carnegie Initiative on the Doctorate and the Pew Charitable Trust, have led to an increased awareness of the need for doctoral students to develop more sophisticated research skills (Golde & Walker, 2006; Walker et al., 2008). More recently, the American Educational Research Association (AERA) and the National Academy of Education (NAEd) have undertaken a large-scale study examining education

research doctorate programs in the United States to aid the understanding of the “substance and quality of education research doctorate programs” (AERA, 2008). Also, as editors of *Review of Educational Research*, LeCompte and colleagues assert that current and comprehensive literature reviews can make a valuable contribution to areas of inquiry (LeCompte et al., 2003) and specifically encourage emerging scholars to learn the necessary skills to write such works. Several authors paralleled LeCompte and colleagues, adding suggestions for ways to improve literature reviews (e.g., Alton-Lee, 1998; Cooper, 1982, 1985; Hart, 1998; Lather, 1999; Lester, 2002; Light & Pillemer, 1982; Locke et al., 2007; Strike & Posner, 1983). All of this work underscores the widespread interest in improving the quality of literature reviews, much of which is focused on doctoral students and emerging scholars.

Practically speaking, if a researcher is unable to identify what work has already been done in the field and what avenues of scholarly inquest have yet to be investigated, there is a diminished capacity for the researcher to produce useful and timely research (Alton-Lee, 1998; LeCompte et al., 2003). In particular, new doctoral recipients who have not mastered the skills of reviewing and synthesizing current literature run the risk of not understanding the most pressing issues within the field (Lather, 1999; LeCompte et al., 2003).

The Dissertation Literature Review

The doctoral dissertation is a singular opportunity for a PhD candidate to demonstrate they have the capabilities and necessary preparation for independent scholarly work (Isaac et al., 1992; see also Association of American Universities, 1998

and Council of Graduate Schools, 1997, 2004, 2005). As part of the only tangible evidence of a candidate's research (Bruce, 1994a; Hart, 1998), the literature review allows them to showcase their ability to critically analyze what work has already been done in the field and how it was conducted, what lines of inquiry have yet to be investigated, their ability to synthesize research from their specific field as well as others, and their ability to resolve ambiguities in the vocabulary and literature (Creswell, 2008; Fraenkel & Wallen, 2006; Gall et al., 2007; Gay et al., 2009; Johnson & Christensen, 2008; McMillan, 2008; Schumacher & McMillan, 2006). As such, the doctoral dissertation literature review can be viewed as one barometer of the overall health of doctoral research training.

While the stylized literary structure of the dissertation literature review (Lovat, 2004) may vary dependent of the type of research the student is involved in (i.e., qualitative, quantitative, or mixed methods), all forms serve similar functions. Primarily, it lays the foundation and provides a context to the research question posed in the dissertation. Additionally, the dissertation literature review allows the candidate to display the high levels of critical thinking skills and sophisticated reasoning required to be a successful researcher for scrutiny and assessment (Hart, 1998; Isaac et al., 1992).

Rubrics as Assessment Tools

As a self-reflexive assessment tool, a well-constructed rubric can help students develop independent critical thinking (Andrade, 2000; Arter, 1993; Huba & Freed, 2000; Simon & Forgette-Giroux, 2001; Stevens & Levi, 2005), a skill necessary to crafting a well-written dissertation literature review. The same rubric can also aid educators in the

application of consistent assessment standards and can help clarify potential areas for improvement (Lovitts, 2006, 2007; Mertler, 2001; Moskal, 2000; Moskal & Leydens, 2000; Simon & Forgette-Giroux, 2001; Stevens & Levi, 2005; Tierney & Simon, 2004). The 12-item *Literature Review Scoring Rubric* (Boote & Beile, 2004, 2005) is an important means of improving literature reviews in doctoral dissertations as it represents a way for faculty supervisors to clarify their expectations to the doctoral candidate (Lovitts, 2006, 2007; Simon & Forgette-Giroux, 2001). The rubric can guide candidates in understanding the process of conducting and writing the literature review. Finally, it can serve as an important educational tool for the candidate to refer to when asked to self-assess their own work and how they might improve on it (Moskal & Leydens, 2000; Simon & Forgette-Giroux, 2001; Stevens & Levi, 2005).

Guided by the common call for improved research skills in education, the *Literature Review Scoring Rubric* (Boote & Beile, 2004, 2005) is an adaptation of Hart's (1998) important work in which he outlines at least eleven of the distinct purposes of a literature review in a thesis or dissertation. Boote and Beile (2004, 2005) expanded the purposes to a list of twelve criteria and divided them into five categories: Coverage, Synthesis, Methodology, Significance, and Rhetoric. (Note that categories do not have the same number of criteria.) The 12 criteria on the *Literature Review Scoring Rubric* are mostly scored on a scale of one (low) to three (high), see Appendix A for details. An exception to this, Criterion H, is scored on a four-point scale.

In Part A of their original study, Boote and Beile (2004) examined 30 dissertations from a stratified random sample and conducted a citation analysis for each.

For Part B, a purposeful sample of 12 dissertations was then selected from the 30 original dissertations (four from each of the three universities represented in the stratified random sample). These 12 dissertations were then evaluated using the *Literature Review Scoring Rubric* (Boote & Beile, 2004, 2005). In regards to Part B, the results of their study reveal that while there was a wide range of quality scores, there was a common failure to synthesize, critique, or explain relevant literature and methodologies. While Boote and Beile's (2005) *Literature Review Scoring Rubric* is a vital part of emerging research, the original study has some limitations in that it examined only dissertations using quantitative methods, the n was small, and the reliability of the rubric has not been fully established.

Researchers in Instructional Technology come from and draw on many disciplines including but not limited to computer science, artificial intelligence, technical writing, psychology, and education. The cross-disciplinary nature of instructional technology makes it a natural bridge between the general field of education research and more focused areas of inquiry within education research and beyond. The consequences of scholars who do not possess sound review skills can be far reaching, especially in an interdisciplinary field such as instructional technology. Indeed, if sophisticated literature review skills are important for the field of education in general, they are magnified for Instructional Technology due to the inherent danger of parallel effort in a cross-disciplinary field. To further the understanding of the quality of literature reviews in education doctoral dissertations, we conducted an instrument design study replicating Part B of Boote and Beile's (2004) study. Following are the research questions for which

we sought answers.

1. What differences exist between dissertations from Instructional Technology and education as a general field of study as measured by Boote and Beile?
2. What differences exist between the scores derived from Chapter 2 alone and scores derived from the entire dissertation?
3. What score differences exist among literature reviews using quantitative, qualitative, or mixed-method study designs?
4. Do scores change differently when derived from Chapter 2 alone or the entire dissertation based on the methodology employed?
5. What is the interrater reliability of the Boote and Beile rubric?

Methods

This research is an instrument design study of the *Literature Review Scoring Rubric* (Boote & Beile, 2004, 2005) for the assessment of doctoral dissertation literature reviews. The specific contribution includes a focus on the field of Instructional Technology. Using *Dissertation Abstracts*, a list of 333 dissertations from Instructional Technology awarded during the years 2006 and 2007 was compiled. These dissertations were found using the search terms the *instructional technology* or *educational technology*. From those, 30 dissertations were randomly selected for evaluation. The lead researcher then removed any identifying information so “blind” evaluations could be conducted.

A team of five reviewers consisting of four doctoral students and one faculty member in Instructional Technology were trained on one of the dissertations using the

Literature Review Scoring Rubric (Boote & Beile, 2004, 2005). To do this, each reviewer evaluated the first dissertation using the rubric and then met to discuss the nuances of applying the rubric and come to a consensus for the score. From there, each dissertation was scored by two total raters. After a “first-pass” scoring, pairs of evaluators discussed each dissertation until they reached consensus. With consistent discrepancies in first-pass scores, due to missed data rather than direct disagreement, a decision was made to always have pairs of raters and always discuss results until consensus was achieved (Stemler, 2004; Yancey, 1999). Dissertations were then given an overall score from 12-37 points by adding values across all 12 criteria. In both the first and second pass scoring, data were reported twice for each rater on each dissertation. One score followed Boote and Beile’s (2004) initial work, examining only the second chapter or literature review. The other score was drawn from any portion of the dissertation, most frequently the introduction and methods. Upon completion of the evaluations, descriptive statistics were computed, overall rubric scores were analyzed using a factorial ANOVA, and interrater reliability was computed using an intra-class correlation. Additionally, Boote and Beile provided their raw scores from the 12 dissertations in their original study so comparisons could be made between research findings.

Results

Effect sizes are reported as Cohen’s d using the pooled estimate of the population standard deviation as the denominator. The alpha level for statistical significance tests was set at $< .05$. Of the 30 dissertations, three were dropped. The first dissertation

dropped was used for training the raters and the other two were dropped for methodological reasons. One of the methodological drops employed a meta-analysis, which as a research form, inherently aligns with prescriptions from the rubric. As an example, a meta-analysis requires full disclosure of inclusion and exclusion decisions (Cooper & Hedges, 1994) that aligns directly with criterion A. The other was a discourse analysis that contained no identifiable literature review chapter making it impossible to score using the *Literature Review Scoring Rubric* (Boote & Beile, 2004, 2005). Of the remaining 27 dissertations, six were quantitative in design, 12 were qualitative, and nine were mixed methods.

In regards to research question one the mean score for the Instructional Technology ($N = 27$) dissertations was 19.96 ($SD = 3.16$), which was substantially lower than the mean for educational dissertations as a whole ($N = 12$) from Boote and Beile 24.08 ($SD = 6.05$; Boote & Beile, 2004). Note there are differences in both the means and the standard deviation. With respect to the standard deviation some of this may be due to positive bias, a result of a much smaller sample size for the prior data. However, that is not the case with the mean. Placing these differences in perspective, this is what Cohen (1988) described as a “large” effect size favoring Boote and Beile’s data ($d = 0.97$). This may well look like an indictment against Instructional Technology dissertations, but additional discussion is warranted. There are three potential causes of score differences: (1) the field of instructional technology, which seems unlikely given the high scores for Instructional Technology dissertations coded by Boote and Beile, (2) different selection criteria for the studies with no attempt to stratify a range of program quality or (3) the use

of different raters.

To address research questions two and three, rubric scores were analyzed using a 3x2 factorial ANOVA with the factors being research design (quantitative, qualitative, or mixed method) and coverage (chapter two only, all chapters). Mean statistics are reported in Table 4.1. The results included a significant main effect for coverage $F(1, 53) = 7.01$, $p = 0.011$, with dissertations obviously scoring higher with all chapters analyzed ($M = 22.07$) than the literature review chapter alone ($M = 19.96$). There was also a main effect for research design $F(2, 52) = 4.48$, $p = .017$, in which both quantitative ($M = 22.08$) and qualitative ($M = 21.71$) work outscored mixed methods ($M = 19.36$) approaches.

In response to research question two and three, the main effects suggest that there is a difference based on both dissertation coverage and methods employed. However, placing this main effect in context is important. The largest pairwise difference favors quantitative dissertations over mixed methods dissertations when all chapters are

Table 4.1

Descriptive Statistics of Consensus Dissertation Scores

Dissertation style	Coverage (0-37 points)			
	Chapter 2		All chapters	
	Mean	<i>SD</i>	Mean	<i>SD</i>
Quantitative ($n = 12$)	20.83	2.93	23.33	2.25
Qualitative ($n = 6$)	20.58	3.18	22.83	2.92
Mixed methods ($n = 9$)	18.56	3.13	20.22	2.22

included. While the effect size comparison between these two is quite large ($d = 1.39$) and constitutes a 10% increase in points, neither mean is very flattering out of the possible 37 on the rubric. In short, the dissertation scores are poor and variations may be statistically significant, but in terms of practical significance, the scores are still poor. As can be seen in Figure 4.1, there was no interaction effect for coverage by study design $F(2, 52) = 0.90, p = 0.92$. The clear response to research question 4 is no, the changes in methodology scores at each coverage type were almost parallel for quantitative, qualitative and mixed-method designs. Although caution should be exercised as we focused on instructional technology work alone, it is possible that dissertations in the broader field of education will score similarly with various research designs irrespective of coverage.

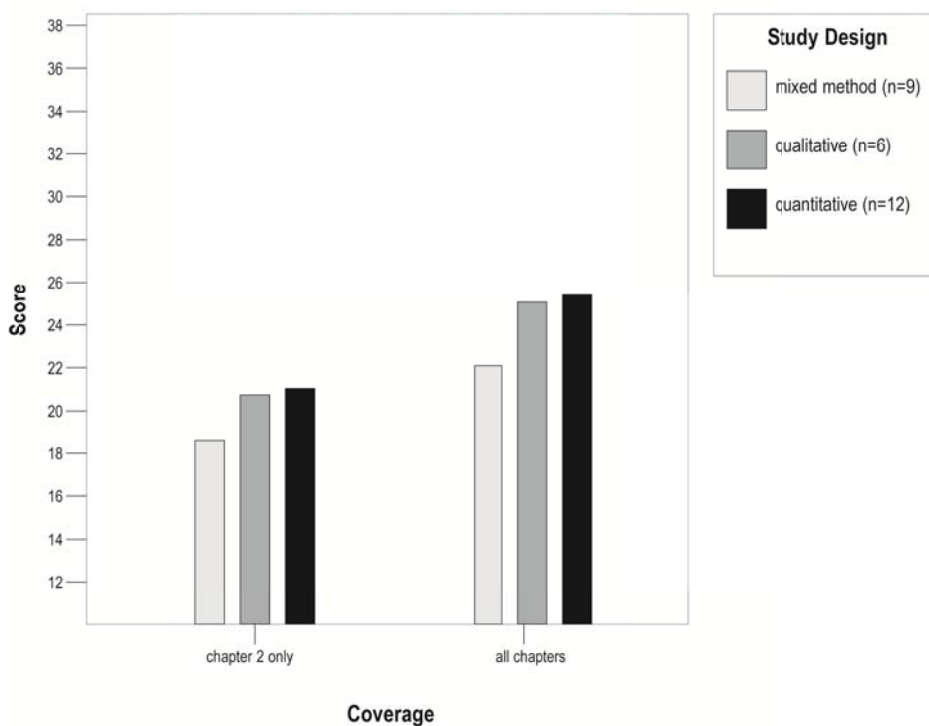


Figure 4.1. Dissertation scores according to coverage and study design.

To examine interrater reliability and address research question five, an intra-class correlation was used. Because all elements of the rubric are not on the same scale (one item is scored from 1 to 4 whereas the remaining are all 1 to 3) the analysis was run on the total scores for each dissertation. The resulting intra-class correlation on inter-rater reliability was not at all flattering (.344) and indicates there was very little agreement on first pass scoring of these dissertations. Possible reasons for this are discussed below.

Discussion and Conclusions

The results indicate little difference exists between the scores for Chapter 2 and the overall dissertation when examined as a whole, providing some support for Boote and Beile's (2004) focus on Chapter 2 in their initial work. Additionally, this may help greatly with use of the rubric since reading through the entire document, even when focused on elements of the rubric, can be incredibly time consuming. The low inter-rater reliability of the first-pass scores was likely due to a combination of factors. First, reviewers were not as familiar with the rubric as its creators. Second, as emerging scholars they may have had fewer consensuses about interpreting elements of the rubric as compared with those who scored dissertations in Boote and Beile's study.

Finally, the rubric itself may have some inherent shortcomings. The difference between scale levels is not conceptually similar for the varying dimensions. For example, to earn a score of two on many of the criterion, a student must "discuss" the criterion. However, for criterion E, "acquired and enhanced the subject vocabulary," discussing the criterion earns a three. Conversely, to earn the higher score of three for most criterion, a

student must critique or “critically examine” the criterion. The exception to this is criterion G, “synthesized and gained a new perspective on the literature,” which requires a student to critique the literature for a score of two (instead of three). Particularly problematic is the scale level between a score of two and three for criterion D, “placed the research in the historical context.” To earn a two, the student need merely “mention” the history of the topic, while the student must make a large cognitive leap to earn a three as it requires them to “critically examine” the history of the topic. Even more troubling, one of the 12 criterion is scored on a scale of four instead of three rendering more sophisticated statistical analysis of the data impractical.

The unequal conceptual differences in scale levels for various criteria makes it difficult in some instances for raters to determine the appropriate score to give the dissertation. In order to improve the reliability of the rubric, clarification of the scale levels is needed, perhaps creating four scale levels for all of the criteria, allowing for a finer gradation of acceptable versus exemplary work. This would also allow for individual scores to be compared in a more meaningful manner. It is quite possible, however, that a high intraclass correlation score is out of reach due to the inherent complexity of the task. In parallel work, it is rare for meta-analysts to use a single rater. Using multiple coders and then reaching consensus may just be the required norm.

The low overall scores may point to a systemic issue within the process of doctoral education in regards to how students are being taught literature review skills. Either the students are not learning them or faculty are not teaching them. However, instead of being a sweeping indictment of the current system, these findings offer the

opportunity for a closer examination of our current practices in educating future scholars and researchers. Indeed, if Phelps (2007) is correct, an increased focus on “the lost art of the literature review” can help set education research back on its rightful course.

The lack of an interaction effect between coverage and methodology is puzzling. While the process of engaging in a literature review for quantitative, qualitative, and mixed-methods designs is similar the write-up has potential for great differences. Given the emergent nature of qualitative research, there should be more indication of literature review elements in the methods, analysis, results, and conclusion sections. It is unclear why score differences for coverage remained parallel for these instructional technology dissertations.

This replication study has several limitations. The factorial ANOVA does not meet requirement of equal cell sizes, which may have impacted the statistical significance of the main and interaction effects. While the focus on Instructional Technology is a good first step caution should be used when generalizing to education as a whole or other focused areas of inquiry. Differences from the Boote and Beile (2004) study could be due to the fact that different raters were used, not because a different content area was examined. Additionally, this study did not deal with the relevance of the literature review in relation to the dissertation research and the possibility of a literature review scoring well on the rubric but lacking relevance to the methods, data collection results and conclusion, a criticism raised by Maxwell (2006). Anecdotally, incongruence between the literature review and other portions of the dissertation was something reviewers observed even when they were not prompted to do so. Informally, the raters noted the detailed use

of the Boote and Beile rubric was a valuable learning experience in terms of crafting their own dissertations, a phenomenon which is supported by research about the benefits of using rubrics in assessment (Moskal & Leydens, 2000; Stevens & Levi, 2005). They agreed its use in the research study improved their own awareness of key elements of a quality doctoral dissertation literature review.

Few would question the statement that well-written, sophisticated literature reviews lead to good research (Alton-Lee, 1998; Lather, 1999; LeCompte et al., 2003). The *Literature Review Scoring Rubric* (Boote & Beile, 2004, 2005) represents one method for assessing the quality of the dissertation literature review. However, much more work remains. Before much of it can proceed, underlying measurement issues must be addressed. Revisions to the rubric are necessary to assure scale levels are conceptually consistent. Validity for the rubric needs to be established, since the area of measurement is highly emergent, meaningful alternatives may preclude concurrent or divergent validity. Predictive validity could be established by examining the relationship between literature review quality and time to peer reviewed publication. Content validity could be established through a content validity ratio or similar analysis. Meaningful extension work is needed to determine if the rubric is robust in assessing non-traditional formats such as multiple-paper dissertations or design-based research.

As a response to the call for increased scholarship in education research through more careful attention to the literature reviews, the *Literature Review Scoring Rubric* (Boote & Beile, 2004, 2005) has proven useful for evaluating dissertation literature reviews, at least within the field of instructional technology, with respect to a diverse set

of research methods and even when used with the literature review chapter alone. This work raises several questions of its own, most notably why qualitative and mixed-methods designs fail to show more dramatic improvement when the entire dissertation is scored. In addition to posing new questions, this research also represents an important step forward in the valid and reliable measurement of literature review efforts by students.

CHAPTER 5

SUMMARY AND CONCLUSIONS

The objective of this research was to fill in a portion of the missing literature addressing doctoral dissertation literature reviews. The two articles that comprise this research allowed for two different views of related phenomena through a common lens. Using the *Literature Review Scoring Rubric* (Boote & Beile, 2005) as a framework for investigation, this dissertation focused on two things. First, the top selling education research methods textbooks used to teach literature review skills to doctoral students, and second, the assessment of the finished dissertation literature review.

In the first article (Chapter 3) an analysis of the top selling education research textbooks used in 2010 explored what doctoral students are being exposed to in regards to reviewing literature. The results indicated that while some universities granting doctorates in education are using textbooks that adequately cover the 12 performance criteria identified by Boote and Beile (2005), the majority of universities are not. These findings support the assertions that education research methods textbooks may be inadequate in preparing doctoral students to successfully undertake a dissertation literature review (Boote & Beile, 2005; Green, 2009; Maxwell, 2006; Onwuegbuzie & Leech, 2005).

The second article (Chapter 4) is a replication of Boote and Beile's (2004) study. This study assessed 30 randomly selected dissertations from a more focused field of education research, Instructional Technology, using the Boote and Beile (2005) *Literature Review Scoring Rubric*. Each dissertation literature review was scored twice;

the first time examined just Chapter 2 (traditionally the literature review section of a dissertation), and the second time examined the dissertation as a whole. The findings suggest that both qualitative and quantitative dissertation literature reviews in instructional technology show the same need for improvement, as do dissertation literature reviews from education.

Taken as a whole, these two studies reveal an interesting relationship. The approach to literature reviews found in many of the top education research textbooks appears to parallel the quality of dissertation literature reviews in *Instructional Technology*. The textbooks had a range of scores from A- to F with an average of a D+ (24/36) for the quality of their coverage. The dissertation literature reviews had a similar range of scores but averaged an F (20/37) on the Boote and Beile (2005) *Literature Review Scoring Rubric*. Caution must be exercised when drawing parallels between the two studies, as they do not have the same research design. However, these results indicate there may be pattern between some of the instructional materials used to teach doctoral students literature review skills and their performance levels as measured by the Boote and Beile (2005) *Literature Review Scoring Rubric*.

Practical and Scholarly Implications

The practical implications of these studies center around what is being taught to about reviewing literature for their dissertation. The scores from the dissertation literature reviews assessed in the second study indicate some doctoral students may not be learning these skills from alternative sources during their doctoral program. However, there are

some doctoral candidates whose dissertation literature reviews scored very high on the *Literature Review Scoring Rubric*. The question remains where and how they learned the critical competencies needed to craft a well-written review.

Faculty can use the findings from the textbook analysis to help guide the selection of teaching materials and examine the curriculum structure to see where it can be strengthened. These findings also help identify areas where faculty and doctoral students alike may want to seek out other sources of information on the process of writing a dissertation literature review.

Some of the areas are prone to inadequate coverage in the textbooks and suggest a need for supplementary instruction. These include, (a) justifying what is included in the review and what studies are not included, (b) acquiring and enhancing the vocabulary related to the subject, (c) articulating the phenomena and variables that are relevant to the topic, and (d) placing the research in the historical context of the field (Boote & Beile, 2005). These deficits hinder the ability of readers of the review to understand the relevancy of the articles and studies and how they support the objective and findings of the dissertation.

From a scholarly perspective, these two studies add to the developing discourse concerning the dissertation literature review in the following ways. The first article addresses the neglected empirical research surrounding instructional materials used to teach literature review skills to doctoral students. It is the first such empirical study in the small, but growing body of research centered on the doctoral dissertation literature review. The replication of the Boote and Beile (2004) research in the second article

extends the empirical research of the assessment of dissertation literature reviews into a specific field of study, instructional technology.

Future Research

There is a process for developing scholars and researchers in education research (Golde, 2007; Richardson, 2006; Walker et al., 2008). An educational research methods textbook is typically doctoral students' first exposure to the specific skills they should possess. The current research reveals that the quality of these texts in terms of transmitting important doctoral competencies related to the review of literature is varied but generally poor. Near the end of the doctoral education process is the dissertation and the current research suggests that students are not being prepared well to undertake the review of literature. The low overall scores for dissertation literature reviews in the second study support the criticism that programs sometimes fall short in preparing emerging scholars and allow some students to graduate without necessary skills (Berliner, 2006; Golde, 2006; Golde & Walker, 2006; Lovitts, 2001; Richardson, 2006). This research indicates a need to replicate the research reported here in order to begin to supply the deficiencies that exist in our understanding of how and what is being taught about the doctoral dissertation literature review. However, additional work needs to be done to expand our understanding of dissertation literature reviews in other disciplines and if they face similar challenges as the ones in education research dissertations.

Preparation of Doctoral Students to Undertake a Review of Literature for the Dissertation

In much of the research about the dissertation literature review, doctoral students have been viewed as possessing impoverished skills as typified by Boote and Beile's (2005) statement: "Students often lack the knowledge and skills even to complete thorough summaries of the existing literature, let alone more sophisticated forms of research synthesis" (p. 6). However, more recent research (Green, 2009; Green & Macauley, 2007) reveals that doctoral students are intentional, autonomous learners who seek to gain mastery over the reviewing process quickly and in their own way. Intentional learners are typically intrinsically motivated to accomplish long-term goals related to mastering and demonstrating competence in their topic (Bereiter & Scardmalia, 1989; Scardmalia & Bereiter, 2006). Further, doctoral students indicate a commitment to conducting high quality research (Walker et al., 2008) even if they are uncertain about the requirements for a dissertation study of high quality (Leonard, 2006; Lovitts, 2001, 2005). Future research should investigate the best ways for doctoral students to build on their intrinsic motivation to master the dissertation literature review process (Green, 2009; Green & Macauley, 2007) and students' performance of these critical competencies as embodied in the written dissertation literature review.

Research might include identifying the authors of some of the highest scoring dissertation literature reviews and interviewing them to discover what qualities they possess, tools they used, and process they implemented in reviewing the literature. Other research can focus on identifying the best methods to support and develop doctoral students' existing intrinsic motivation and "autonomous tendencies as literature searchers"

(Green, 2009, p. 170). Future research should explore how doctoral students master the review process and how doctoral education can empower graduate students in exploring their own literature reviews within the context of their research paradigm and topic.

Instructional Materials

In regards to the textbooks analysis study, future research should examine whether a causal relationship exists between the textbooks and the quality of the literature reviews produced by the students. Given the need for preliminary research at both the preparation and outcomes stages, the current research was not targeted at exploring any causal links. Future studies could use two separate texts for a particular section of the same course and then assess the literature review students produce in the course. Other studies could use the information from FacultyCenter.net to identify which universities are using a particular education research textbook and then assess dissertation literature reviews from dissertations from their respective education departments.

Maxwell (2006) called for a closer investigation of relevant works outside the education research methods textbooks typically used by doctoral students. He contends that these alternatives have “valuable, often detailed guidance” in regards to reviewing literature for the dissertation. Indeed many of these resources provide a more integrated approach to searching, reading, and writing the dissertation literature review (i.e., Galvan, 2009; Hart 1998, 2001; Pan, 2008) compared to the compartmentalized and simplified approach to the dissertation literature review found in many education research methods textbooks. However, these instructional materials have not been empirically evaluated. The methods of the textbook analysis could be replicated to determine whether these

other instructional materials provide doctoral students more guidance in crafting a review of literature for the dissertation.

Performance Expectations and Assessment of the Dissertation Literature Review

A counterpart to this research is continued work on establishing performance expectations and methods of assessing the dissertation literature review. The Boote and Beile (2005) rubric represents a pioneering effort to help students and faculty alike have a better grasp of what constitutes a “good” literature review. However, the rubric is not perfect, nor does it capture all the nuanced varieties of dissertation literature reviews. Additional research is needed to establish the universal applicability (Slomp & Fuite, 2004) of the *Literature Review Scoring Rubric* (Boote & Beile, 2005).

Typically, research on rubrics only reports the reliability coefficients (Jonsson & Svingby, 2007; Reddy & Andrade, 2009). This is the case with the research that has been done on the *Literature Review Scoring Rubric*. Of the empirical studies using the rubric as an assessment tool (Boote & Beile, 2004; Fitt et al., 2008; Fitt, Walker, & Leary, 2010), only one reports the interscorer reliability coefficient (viz., Fitt et al., 2010). None of them report on any form of validity evidence. Further research about this performance assessment needs to center around additional reliability testing and establishing validity (Messick, 1995a, 1995b; Slomp & Fuite, 2004). Additional reliability studies should include a test-retest study in which a single rater scores selected dissertation literature reviews using the rubric on two separate occasions, separated by a period of time. Research should also be done to determine if providing examples for each of the

performance levels (known as anchors) improves the interscorer reliability (Brown, 2008; Jonsson & Svingby, 2007; Rezaie & Lovorn, 2010).

Validity about rubrics is rarely reported and in the few instances it is reported, it is usually discussed in terms of general construct validity (Jonsson & Svingby, 2007; Moskal & Leydens, 2000). To expand the understanding of the validity of the rubric, Messick's (1995a, 1995b) comprehensive theory of construct validity of performance assessments could be applied. Among the first studies should be an examination of the content validity (how well the knowledge and skills are represented by the rubric) by consulting with a panel of experts in the field. Also, as the rubric is gaining widespread use as an instructional tool and as a model for structuring the literature review in disciplines outside of education research, studies need to be completed to determine the generalizability of the rubric.

Nature, Rationale, and Potential of the Dissertation Literature Review

There is an emerging dialog about the purpose of the dissertation literature review (Boote & Beile, 2006; Green, 2009; Golde, 2007, 2010; Kamler & Thomson, 2006) based on the concept of signature pedagogies in education research (Shulman, 1999, 2005, Shulman et al., 2006). This interest in the pedagogical potential of the dissertation literature review stems from research done over the last decade on ways to improve doctoral education and assessment (Borkowski, 2006; Golde & Walker, 2006; Holbrook, 2001; Richardson, 2006; Walker et al., 2008). The increased interest in the formation of scholars coupled with the call to develop a signature pedagogy in education (Golde, 2007,

2010; Olson & Clark, 2009; Shulman, 2005) provides fertile opportunities for continued research in the area of the dissertation literature review.

The work of reviewing the literature has the potential to become an important part of identity formation for future scholars (Green, 2009; Kamler & Thomson, 2006). Kamler and Thomson see literature reviewing as “*the quintessential site of identity work*” (2006, p. 29, original emphasis) for doctoral students. This view of the dissertation literature review moves beyond Maxwell’s (2006) assertion that the purpose of the dissertation literature review is to inform a planned study. It reaches into new territory by reframing the doctoral dissertation literature review as a creative process (Montuori, 2005) in which doctoral students begin to form their identity as researchers in the broader community of discourse (Green, 2009; Kamler & Thomson, 2006).

Early researchers have the chance to shape the discussion about the purpose and nature of reviewing literature for the dissertation. Literature reviewing has significant pedagogical potential (Green, 2009; Kamler & Thomson, 2006) as doctoral students are initiated into the ways a discipline conducts research (Golde, 2007, 2010; Shulman et al., 2006). Developing an understanding of the performance expectations and assessment of the dissertation literature review is central to the process of refining the purpose of the dissertation literature review. Exploring the experiences of doctoral students and faculty is also an important part of future research in this area.

Exploring Graduate Students’ Experiences, Perceptions, and Abilities about the Dissertation Literature Review

Little is understood about how doctoral students engage in reviewing literature.

While doctoral students may be intentional learners who are eager to master core doctoral competencies (Green, 2009; Green & Macauley, 2007), the scores of the dissertation literature reviews assessed in this research point to the reality that many of them are not mastering these competencies while completing their PhD program. Future research should extend Bruce's (1994a, 1997, 2001) phenomenographic studies and further explore how doctoral students conceptualize the literature review and what it means to them to "review literature." Studies should focus on what doctoral students actually do when they review literature as opposed to what textbooks and other resources tell them to do. As reviewing the literature is an iterative process of searching for and writing about literature (Combs et al., 2010a; Green, 2009, Kamler & Thomson, 2006), research should also focus on the process through which doctoral students best learn to master this recursive approach to literature reviews.

Exploring Faculty Supervisors' Experiences and Perceptions

Future research in this area should follow up on the previous research about faculty experiences with the dissertation literature review (Holbrook et al., 2007; Zaporozhetz, 1987) and the performance expectations they may have (Lovitts, 2007). Mirroring the empowered view of the doctoral student, research about faculty expectations and perceptions of the dissertation literature review should attempt to identify what is working well for faculty. Establishing the performance expectations of faculty supervisors is an important part of developing pedagogy for the dissertation literature review. Lovitts (2007) began this important work but no researcher has yet

followed up on her initial foray into the area.

Conclusion

This current research has examined the doctoral dissertation literature review from two different ends of the experience. The research focused on the materials doctoral students encounter early in their training as well as the materials they produce as the culminating experience of their doctoral training. However, there remains a gap in the understanding of the process of how future scholars are prepared and the purpose of the dissertation literature review in preparing them for their future roles. This research has taken the first steps towards this larger whole and makes a major contribution in that it contributes the only reliability measures for a widely used performance assessment rubric. It also stretches the use of the rubric into a new content area, Instructional Technology. The textbook analysis study also represents a large contribution because it is the first time the textbooks have been systematically examined using performance criteria for the dissertation literature review.

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APPENDICES

Appendix A
Textbook Coding Sheet

Textbook Coding Sheet

Author(s): _____

Year: _____

Coder Name: _____

COVERAGE RATINGS
 0 = No mention of criterion
 1 = One or two sentences about criterion
 2 = At least three sentences about criterion (do not have to be contiguous)
 3 = Criterion is mentioned (regardless of length) AND an example is provided

Criteria	Coverage Specifications	Notes	Rating
A. Justification for inclusion and exclusion from review. (Coverage)	This must refer specifically to justifying the articles, reports etc., used in the literature review. Why were they selected as opposed to other articles/studies?		
B. Distinguish what has been done in the field from what needs to be done. (Synthesis)	Self-explanatory. This is actually the most broadly discussed criterion in and out of textbooks.		
C. Place the topic or problem in the broader scholarly literature. (Synthesis)	The topic of the lit. review in context of the broader field. For example, the topic of dissertation literature reviews should be situated in the fields of doctoral education in general, doctoral writing, graduate writing assessment, etc.		
D. Place the research in the historical context of the field. (Synthesis)	OK if they are discuss history in general terms, like summarizing a long period of time ~ not necessarily specific studies.		
E. Acquire and enhance the subject vocabulary. (Synthesis)	“Search terms” does not fit this criterion. It MUST be about defining key vocabulary. Sometimes this information is located outside of the literature review, which is OK. It is a stylistic requirement for some universities and may be reflected in the textbooks. Once again, it does not refer to identifying search terms used when locating literature.		

Criteria	Coverage Specifications	Notes	Rating
F. Articulate important variables and phenomena relevant to the topic. (Synthesis)	Refers to the variables and phenomena relevant to the research problem and literature review.		
G. Synthesize and gain a new perspective on the literature. (Synthesis)	Many different ways to synthesize literature, from a meta-analysis to a vote count to tabulating findings. A narrative synthesis can also be included in this category. However, a narrative synthesis is MORE than listing like groups of articles with like groups of articles.		
H. Identify the main methodologies and research techniques that have been used in the field, and their advantages and disadvantages. (Method.)	This criterion is referring specifically to methodologies that have been used to answer the same or a similar research question as the one for the literature review. This is NOT about the methods section for a research report.		
I. Relate ideas and theories in the field to research methodologies. (Methodology)	Referring specifically to the ideas/theories about the literature review topic.		
J. Rationalize the practical significance of the research problem. (Significance)	References to rationalizing how the research can be applied in practical settings, like schools etc.		
K. Rationalize the scholarly significance of the research problem. (Significance)	References to rationalizing how the research can help further the research or understanding of the research problem.		
L. Write in a coherent, clear structure that supports the review. (Rhetoric)	This deals with sequencing of articles in a written review, rhetorical devices, etc., the actually writing of the review.		

Adapted with permission from “Scholars Before Researchers: On the Centrality of the Dissertation Literature Review in Research Preparation.” By David Boote & Penny Beile (2005). *Educational Researcher*, 34(6), 3-15. *Educational Researcher*, 34(6), 3-15.

Appendix B
Literature Review Scoring Rubric

Literature Review Scoring Rubric (Boote & Beile, 2005)

Category	Criterion	1	2	3	4
1. Coverage	A. Justified criteria for inclusion and exclusion from review.	Did not discuss the criteria inclusion or exclusion	Discussed the literature included and excluded	Justified inclusion and exclusion of literature	
2. Synthesis	B. Distinguished what has been done in the filed from what needs to be done.	Did not distinguish what has and has not been done	Discussed what has and has not been done	Critically examined the state of the field	
	C. Placed the topic or problem in the broader scholarly literature.	Topic not placed in broader scholarly literature	Some discussion of broader scholarly topic	Topic clearly situation in broader scholarly literature	
	D. Placed the research in the historical context of the field.	History of subject not discussed	Some mention of history of topic	Critically examined history of topic	
	E. Acquired and enhanced the subject vocabulary	Key vocabulary not discussed	Key vocabulary defined	Discussed and resolved ambiguities in definitions	
	F. Articulated important variables and phenomena relevant to literature	Key variables and phenomena not discussed	Reviewed relationships among key variables and phenomena	Noted ambiguities in literature and proposed new relationships	
3. Methodology	G. Synthesized and gained a new perspective on the literature	Accepted literature at face value	Some critique of literature	Offered new perspective	
	H. Identified the main methodologies and research techniques that have been used in the field, and their advantages and disadvantages.	Research methods not discussed	Some discussion of research methods used to produce claims	Critiqued research methods	Introduced new methods to address problems with predominant methods
	I. Related ideas and theories in the field to research methodologies.	Research methods not discussed	Some discussion of appropriateness of research methods to warrant claims	Critiqued appropriateness of research methods to warrant claims	
4. Significance	J. Rationalized the practical significance of the research problem.	Practical significance of research not discussed	Practical significance discussed	Critiqued practical significance of research	
	K. Rationalized the scholarly significance of the research problem.	Scholarly significance of research not discussed	Scholarly significance discussed	Critiqued scholarly significance of research	
5. Rhetoric	L. Was written with a coherent, clear structure that supported the review.	Poorly conceptualized, haphazard	Some coherent structure	Well developed, coherent	

Note. Originally appeared in Boote & Beile's 2005 "Scholars before researchers: On the centrality of the dissertation literature review in research preparation." *Educational Researcher*, 34(6), 13. Used with permission.

Appendix C

How to Grade a Dissertation

I've Written One—So How Do I Grade a Dissertation? The New Faculty Member and Dissertations

Byron R. Burnham

One of the most unsettling tasks for a new faculty member has to be critically reading a student's dissertation and then actually commenting on it. Well, that's an exaggeration, I'm certain. But weren't you a bit unsettled when you participated in your first dissertation defense as a new faculty member? I was; in fact I'm still a bit worried about showing my intellectual acumen to my fellow faculty as we debate the finer points of Campbell and Stanley or Glaser and Straus. How do I know if a dissertation is worthy to be called doctoral-level effort?

Chuck Carpenter, department head of Nutrition and Food Science, shared an article by Barbara E. Lovitts which provides an insightful look at dissertation quality. Her article is found in *Academe* (Nov-Dec, 2005). "How to Grade a Dissertation" offers a systematic look at dissertation quality. She and her team interviewed 276 faculty members across 10 disciplines at 9 research universities. These faculty members represented 6,129 years of experience, 3,470 dissertations, and 9,890 dissertation committees. Faculty members were asked to "characterize dissertations and their components" at the following levels: outstanding, very good, acceptable, and unacceptable.

I've taken the table that Ms. Lovitts built from her research and added a left-hand column of structural components that seemed to lay in the data contained in her first table. I've also extended her logic as some of cells were blank in the resulting matrix. The revised table is presented below. It is offered as a help to new faculty members who may be looking for a grading rubric for this very creative and intellectual undertaking.

Some have asked if we should provide a grade for a dissertation. My initial reaction to that is a no; however, upon reflection, there may be positive outcomes and results if a department were to provide a classification for a dissertation that is judged to be of superior quality; an award of "outstanding" or "distinction" might provide recognition from the department to a student's efforts in doing excellent research or scholarship.

As I've thought about the descriptors in the "unacceptable" column, I've concluded that if a proposal were approved with those inherent defects, then the approving committee's judgment would be lacking. Those problems should be detected and remedied before a proposal is accepted. Descriptors in the unacceptable column might be viewed as fatal flaws in both the dissertation and the proposal. Some faculty members feel (and I agree) that the "acceptable" column also contains fatal flaws that should not be acceptable.

This table is intended as a help to faculty members and not as a fixed set of rules for grading. Use it how it best fits your discipline, department, students, and academic culture. We propose it as a help in the development of a scholar (student and/or faculty member).

How to Grade a Dissertation*

Elements	<i>Outstanding</i>	<i>Very Good</i>	<i>Acceptable</i>	<i>Unacceptable</i>
Structure	Original, significant, ambitious, brilliant, clear, clever, coherent, compelling, concise, creative, elegant, engaging, exciting, interesting, insightful, perceptive, sophisticated, surprising, thoughtful—connects components in a seamless way	Solid	Workmanlike—little creativity, imagination, or insight	Shoddy presentation, careless or no logic

(table continues)

How to Grade a Dissertation*				
Elements	<i>Outstanding</i>	<i>Very Good</i>	<i>Acceptable</i>	<i>Unacceptable</i>
Writing	Very well written and organized	Well written and organized	Technically correct, plodding and pedestrian	Poorly written, spelling and grammar errors
Originality	Synthetic and interdisciplinary, mature, independent thinking, clearly states the problem and why it is important	Has some original ideas, insights, and observations	Research is present not very original or significant	Plagiarizes or misreads, misuses sources, does not understand concepts, processes, or convention of the discipline
Questions	Asks new questions or addresses an important question or problem	Good question or problem that tends to be small	Non-exciting question, not interesting, nor surprising	Trivial, unoriginal, weak questions or previously solved problem
Place	Deals with an original problem or uses an original approach to a problem	Is the next step in a research program (good normal science)	Highly derivative or an extension of advisor's work	Unconnected to issues and problems in the field
Literature	Displays a deep understanding of massive amount of complicated literature, exhibits a command over the material	Mastery of subject matter	Displays a narrow understanding of field, reviews the literature, but is not critical of it	Misses relevant literature
Argument	Exhibits mature, independent thinking; has a strong, confident point of view; argument is focused, logical, rigorous, and sustained	Has a strong, comprehensive and coherent argument	Sustains an argument, but is not imaginative, complex, or convincing	Weak, inconsistent argument
Theory	Theoretically sophisticated and deeply understands theory	Uses appropriate theory	Understands theory and applies it minimally to the problem	Theory is missing or wrong
Design	Brilliant research design, new tools and methods	Appropriate design is employed	Appropriate design	Inappropriate or incorrect methods; data are flawed, wrong, false, fudged, or misinterpreted
Analysis	Thoroughly researched, multiple data sources, analysis is comprehensive, complete, sophisticated and convincing	Appropriate analytical methods are used	Standard methods unsophisticated analysis, does not explore possibilities and misses connections	Wrong, inappropriate, incoherent, confused analysis
Results	Results make a significant impact on the field	Obtains solid, expected results or answers, misses opportunities to completely explore interesting issues and connections	Has predictable results	Results are obvious, already known
Contribution	Publishable in top-tier journal, changes the way people think	Makes modest contribution	Makes small contribution	Unexplained or misinterpreted, does not make a contribution

*Based upon "How to Grade a Dissertation" by Barbara E. Lovitts, *Academe*, Nov-Dec, 2005

Burnham, B. (2009). I've written one—so how do I grade a dissertation? The new faculty member and dissertations *USU School of Graduate Studies Graduate Gazette* (16) 1. Used by permission of the author.

Appendix D

Letters of Permission to Use Material

August 29, 2011

Melynda H. Fitt
1552 Glenlake Circle
Niceville, FL 32578
850-897-0064

Re: Permission to Use

Dear Dr. Andrew Walker:

I am in the process of preparing my dissertation in the Department of Instructional Technology and Learning Sciences at Utah State University. I hope to complete it in the fall of 2011.

I am requesting your permission to include the attached material as shown. Please indicate your approval of this request by signing the space provided, attaching any other form or instruction necessary to confirm permission. If you have any questions, please call me at the number above.

Thank you for your time and attention to this matter,

Melynda H. Fitt

I hereby give permission to Melynda H. Fitt to reprint the following material in her dissertation.

Fitt, M. H., Walker, A. E., Leary, H. H. (2010). *Assessing the quality of doctoral dissertation literature reviews in instructional technology*. Manuscript submitted for publication.

Signed



August 29, 2011

Melynda H. Fitt
1552 Glenlake Circle
Niceville, FL 32578
850-897-0064

Re: Permission to Use

Dear Heather Leary:

I am in the process of preparing my dissertation in the Department of Instructional Technology and Learning Sciences at Utah State University. I hope to complete it in the fall of 2011.

I am requesting your permission to include the attached material as shown. Please indicate your approval of this request by signing the space provided, attaching any other form or instruction necessary to confirm permission. If you have any questions, please call me at the number above.

Thank you for your time and attention to this matter,

Melynda H. Fitt

I hereby give permission to Melynda H. Fitt to reprint the following material in her dissertation.

Fitt, M. H., Walker, A. E., Leary, H. H. (2010). *Assessing the quality of doctoral dissertation literature reviews in instructional technology*. Manuscript submitted for publication.

Signed _____

A handwritten signature in black ink that reads "Heather M. Leary". The signature is written in a cursive style and is positioned above a horizontal line that serves as a signature line.

August 29, 2011

Melynda H. Fitt
1552 Glenlake Circle
Niceville, FL 32578
850-897-0064

Re: Permission to Use

Dear Dr. Joel Gardner:

I am in the process of preparing my dissertation in the Department of Instructional Technology and Learning Sciences at Utah State University. I hope to complete it in the fall of 2011.

I am requesting your permission to include the attached material as shown. Please indicate your approval of this request by signing the space provided, attaching any other form or instruction necessary to confirm permission. If you have any questions, please call me at the number above.

Thank you for your time and attention to this matter,

Melynda H. Fitt

I hereby give permission to Melynda H. Fitt to reprint the following material in her dissertation.

Fitt, M. H., Gardner, J., Bloxham, K. T. (2011). *Dissertation literature review skills and education research methods textbooks: An Inadequate pedagogy*. Manuscript in preparation.

Sig

August 29, 2011

Melynda H. Fitt
1552 Glenlake Circle
Niceville, FL 32578
850-897-0064

Re: Permission to Use

Dear Dr. Kristy Bloxham:

I am in the process of preparing my dissertation in the Department of Instructional Technology and Learning Sciences at Utah State University. I hope to complete it in the fall of 2011.

I am requesting your permission to include the attached material as shown. Please indicate your approval of this request by signing the space provided, attaching any other form or instruction necessary to confirm permission. If you have any questions, please call me at the number above.

Thank you for your time and attention to this matter,

Melynda H. Fitt

I hereby give permission to Melynda H. Fitt to reprint the following material in her dissertation.

Fitt, M. H., Gardner, J., Bloxham, K. T. (2011). *Dissertation literature review skills and education research methods textbooks: An Inadequate pedagogy*. Manuscript in preparation.

Signed Kristy Bloxham PhD

VITA

MELYNDA HARRISON FITT

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EDUCATION

2006-2011 *Doctor of Philosophy, Instructional Technology & Learning Sciences*
 Utah State University
 Adviser: Dr. Andrew Walker
 Logan UT

Dissertation Title: An Investigation of the Doctoral Dissertation
 Literature Review: From the Materials We Use to Prepare
 Students, to the Materials that Students Prepare

Courses taken: Psychometrics, Simulations, HTML, Grant Writing,
 College Teaching Methods, Education/Psychology
 Research, Research Design and Analysis, Qualitative
 Research Methods, Research in Instructional Technology
 and Learning Sciences, Literature Review in Education/
 Psychology. Completed practicum in open education
 resource development, grant writing, research methodology,
 and developing assessments for graduate education

2000-2003 *Masters Degree, Instructional Technology*
 Utah State University, Dec 2003
 Adviser: Dr. Joanne Bentley
 Logan UT

Courses taken: Adult Education, Learning Theory, Instructional Design
 Theory, Instructional Development Tools, Learning
 Communications Theory, Instructional Design for Adult
 Education, Distance Education, Digital/Audio Video
 Production

1995-2000 *Bachelors of Science, Psychology*
Utah State University, Aug 2000
 Logan UT

Courses taken: Learning & Motivation, Analysis of Behavior, Advanced
 Analysis of Behavior, Physiological Psychology, Human
 Development, Behavior Modification, Social Psychology,
 Cognitive Psychology, Personality Theory

EXPERIENCE

Aug 2006—May 2008 Utah State University Logan UT
 Research Assistant/Instructional Designer

- Worked closely with subject matter experts to develop a scalable online certification program for fitness instructors using Blackboard Vista as a platform for delivery
- Developed and wrote project proposals for each phase of development
- Conducted requisite analyses, including needs analysis, target population analysis, current training and resource analysis, task analysis, and objectives analysis
- Designed storyboards for development team
- Worked as part of a team to conduct formative and summative evaluations
- Designed and supervised the development of a course about conducting an integrative literature review in education and psychology for USU's OpenCourseWare

May 2007 - Aug 2007 Utah State University Logan UT
 Teaching Assistant/Instructional Designer

- Graduate Teaching Assistant for 2 sections of Learning Theory delivered online
- Updated course content and transitioned it from WebCT to Blackboard Vista
- Facilitated online discussion boards and managed student records
- Administered exams, graded weekly papers and final projects for approx. 60 students
- Traveled to remote site to conduct the face-to-face culminating experience for each section

Jan 2006 - Jul 2006 JHT, Incorporated Orlando FL
 Instructional Designer

- As a contract employee, worked as part of a team to adapt US Navy's C-

- school face-to-face content to be delivered ship-side via distance technologies
- Worked closely with subject matter experts from Harris Corporation and the US Navy to identify key skills used in the repair and maintenance of the High Frequency Radio Group systems used on battleships
 - Constructed extremely detailed story boards for the development team in Orlando
 - Developed learning objects and ensured content matched the state objectives
 - Created a variety of assessments for each modules from multiple choice questions to simulation modules
 - Participated in weekly review sessions with lead content developers to ensure instruction was meeting design specifications
 - Worked independently and telecommuted daily via a secure VPN from Sterling VA

Dec 2001-May 2002 TRI-SPED Logan UT
Instructional Designer/Technician II

- Worked with members of development team to transition face to face training materials to web-based delivery of courses
- Created assessments and analyzed needs of adult paraeducators to create online training to meet national and state requirements
- Project manager/creative editor for production of over 5 edited hours of training videos
- Worked closely with video editing team to ensure final product met exactly federal training requirements
- Consulted extensively with State education agencies across the nation to create individualized online versions of paraeducator training
- Motivated and tracked design team efforts to ensure strict deadlines and budgetary limits were met

2000-2001 ASD Project Logan UT
Instructional Designer/Technician II

- Created instructional content for nationally disseminated faculty training (<http://asd.usu.edu/>)
- Analyzed existing training materials from over 20 Disability Resource Centers at Universities across the nation to determine appropriate instructional strategies
- Planned and conducted training needs analysis of 250 university professors and 15 University Disability Resource Centers across the nation
- Identified learning objectives and consulted with national accreditation and certification organizations to ensure training met rigorous requirements set forth by federal agencies and adhered to current law

- Created evaluation instruments administered to university professors and staff to assess effectiveness of training products created and delivered by ASD

PUBLICATIONS/PRESENTATIONS

Fitt, M. H., Walker, A. E., & Leary, H. M. (2009). Assessing the quality of doctoral dissertations in Instructional Technology. Paper presented at the American Education Research Association, San Diego, CA.

Leary, H. M., **Fitt, M. H.**, & Wiley, D. (2009). "Changing Higher Education Learning with Web 2.0 and Open Education Citation, Annotation, and Thematic Coding Appendices" (2009). *ITLS Research*. Paper 7.
http://digitalcommons.usu.edu/itls_research/7

Leary, H. M., Walker, A. E., **Fitt, M. H.**, Shelton, B. E. (2009). Expert versus novice tutors: Impacts on student outcomes in problem-based learning. Paper presented at the American Education Research Association, San Diego, CA.

Fitt, M.H., Bentley, J. P. H., & Gardner, J. (2008). Rays of change: Towards a better framework for doctoral dissertation literature reviews in Instructional Technology. *Proceedings of the Association for Educational Communications and Technology, 2008*. Orlando, FL.

Bentley, J. & **Fitt, M. H.** (2005). How to Avoid the Whirling Blades of Blended Learning as a Moderator. In P. Kommers & G. Richards (Eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2005* (pp. 1742-1746). Chesapeake, VA: AACE.

AFFILIATIONS/MEMBERSHIPS

AECT
 AERA

AWARDS/HONORS

2008 AECT Featured Research Paper at the annual conference, Orlando FL
 2006-2007 Vice Presidential Research Fellowship
 2000 USU Department of Psychology Undergraduate Researcher of the Year