



2010

The Educators of Educators: An Evaluation of Carnegie Foundation's "Very High Research Activity" Universities' Schools of Education Professors

Joshua R. Polanin
Loyola University Chicago

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LOYOLA UNIVERSITY CHICAGO

THE EDUCATORS OF EDUCATORS:

AN EVALUATION OF CARNEGIE FOUNDATION'S "VERY HIGH RESEARCH
ACTIVITY" UNIVERSITIES' SCHOOLS OF EDUCATION PROFESSORS

A THESIS SUBMITTED TO

THE FACULTY OF THE GRADUATE SCHOOL

IN CANDIDACY FOR THE DEGREE OF

MASTER OF ARTS

PROGRAM IN RESEARCH METHODOLOGY

BY

JOSHUA R. POLANIN

CHICAGO, IL

AUGUST 2010

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ACKNOWLEDGEMENTS

To my mother who provides endless support and love. To my father who provides continual encouragement and a constant reminder of how to be a professional.

To my siblings, Brad and Krista, who keep me grounded and sane, and to the rest of my family who never question why I am on this path.

To Megan, without you I am not able to continue on this journey each day. Your love and support has been unwavering. It was a blessing to meet you here, and I am endlessly thankful. I look forward to our future ahead.

Finally, to Dr. Terri Pigott: you not only provide mentoring that all aspiring researchers require, you provide me with sincere mental and emotional support. Indeed it was your vision that started this endeavor, and it is truly a blessing to work with you every day. I look forward to our next few years here and the continued journey.

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ABSTRACT

The field of education is diverse, its history marred with politically driven problems, and its research ill-funded and often disaggregated. Indeed researchers of the past have questioned education research's purpose (Kaestle, 1993) while researchers of the present doubt the field's ability to evaluate properly its current researchers and research (Hedges & Hans-Martin, 2009). Therefore the purpose of this thesis was to investigate and evaluate critically who education researchers were and what type of research they produced.

Using a nationally representative, stratified-random sample technique, this author distributed the Education Research Identity Survey (ERIS) electronically via email to 2,723 Schools of Education professors with the Carnegie Foundation's "very high research activity" universities. Five hundred and forty three individuals participated (raw response rate = 19.9%, final response rate = 22.2%); most received a PhD (81%) in Education (57.1%) and held tenure (57.0%). All academic positions and epistemological backgrounds were represented.

Analyses revealed several findings of interest. First, most education researchers prefer nonexperimental quantitative designs or case study qualitative designs. Second, epistemological training was strongly related to the type of research that an individual conducted as a professor. Third, MANOVA analysis revealed that after controlling for the number of years since doctoral matriculation, number of years at his or her university,

and the average number of courses taught per semester a professor's academic position and epistemological quantitative training were both related to the amount of journal articles the professor produced in the last five years.

Finally, these conclusions follow broader previous research conducted within the field of higher education, but represent some of the first quantitative analysis within the field of education. However, since this author surveyed researchers from only one specific Carnegie type, future research is required to confirm these findings.

CHAPTER ONE

INTRODUCTION

Often asserted in popular academic literature is the role of the education researcher. Since the installation of the Office of Education enacted by the Cooperative Research Act of 1954, funded education researchers sought to improve and reform education in this country (Lagemann, 1997). In recent years education researchers and their craft have been called into question. Carl Kaestle's (1993) "The Awful Reputation of Education Research" questioned education researchers' usefulness, training, and their dissemination practices. In fact, the growing problem prompted the federal government to enact the No Child Left Behind Act of 2001 that established scientifically based standards of practice (Hostetler, 2005).

These often-discussed research standards provided the education research community with a uniform code of research conduct. Unfortunately, these standards provided little assistance to evaluate the education research community and its work. Indeed Hedges and Hans-Martin (2009) contended that the evaluation of education research and the field was difficult due to its "large and diverse enterprise" (p. 105). The authors posited that no education researcher definition existed and that little information was available on the individuals who conduct this research. Further, this information about the field would help to inform the evaluation of education research and its researchers as a whole.

For generations, education research in this country has been marred often by ill-conducted programs with good intentions. Over the last decade, however, policy makers and practitioners have called upon education researchers to improve. Therefore, this community required an evaluation of its practices.

Statement of Purpose

Hence, it remained this author's intention to investigate and evaluate the field of academic education research. The goal of this study was to evaluate critically the efforts of education researchers and the methods they utilized. In addition, this author sought to provide new information on the training practices and consequences of these programs.

Significance of the Study

Indeed little information is available to inform the education research community members, where they work, and what or how much research they produced. In addition to Hedges and Hans-Martin (2009), other authors recently have observed a dearth of information about the education research field (Davis, 2008). Often stereotypes and anecdotal evidence pervaded the industry, thus surveying the School of Education researchers and to analyze empirically their responses closed the gap in existing literature.

Research Questions

This author's research question and subsequent method remained simple: Who are the people conducting education research within Schools of Education? What types of training did they receive as a doctoral student and how did that influence their academic research? Finally, how much and what type of published research did they produce?

Design

To investigate this question this author employed a non-experimental, stratified-random, proportionally representative sample, survey research design. With the help of the internet and email, this author accessed 2,273 education professors across the nation, and asked (begged) these researchers to participate in a thirty-question descriptive survey. All professors were from Schools of Education within the Carnegie Foundation's "very high research activity" institutions.

CHAPTER TWO

LITERATURE REVIEW

Brief history of Research in Education

In order to understand better the field of education research it is paramount to comprehend its origin. This section therefore seeks to understand where the field of education derived in order to elucidate who previously conducted research in education. This section explains the field's debated beginnings, the start of federal funding, and the field's recent tumultuous refocus.

Origin dilemma. Although it is difficult to declare with certainty how or by whom education research commenced, it is important to observe the works of those who created the notion of education research and reform. Three such beginnings still heavily debated are addressed below.

It is fitting to begin with the man who once referred to himself as the “father of education research” (Johanningmeier & Richardson, 2008, p. 30). Joseph Mayer Rice's career did not start as an education researcher; rather, in the 1880's he left his pediatrician practice to study pedagogy. After he attended pedagogy conferences and observed a few local classrooms, Rice became interested in the disparity between schools' facilities. Because of his background in medicine and local observations, he learned not to trust schools' internal status report. As such, Rice traveled to thirty-six cities in 1892 to observe and

report on the American school system. After he observed these classrooms, Rice concluded that school reform indeed required national attention.

Driven to provide adequate school reform, Rice again set out to collect national comprehensive data. Discouraged by inaccurate pilot program spelling test data, he decided to administer “the first general survey of a particular field” (Vinovskis, 2009). Rice concluded that the teaching method of spelling, either old education style or new, mattered little to children in the later high school years. Certainly without the benefit of Fisherian ANOVA or significance tables, it was difficult to prove the statistical significance of Rice’s findings. Rice’s study and findings, however, originated the ideas of test validity, reliability, and variability. Indeed some years later, Scates’ (1945) text concluded that Rice’s spelling study “was the beginning of the modern movement for the objective study of education” (p. 351).

Still, for all Rice’s work within schools, some authors argued that education research began elsewhere. Prior to 1870, high school enrollment included only children of prestige and wealth. In the years following 1870 through 1900, high school enrollment grew from 72,000 to 520,000. In fact, from the years 1890-1918, the United States population increased only 68 percent while high school enrollment increased 711 percent. Every day during that time a new high school was built, and consequently public education expenditures were greater than that of defense or welfare (Tyack, 1974).

As high school popularity increased, so too did programs of pedagogy in universities. Interestingly, as many across the country raced to establish programs of education research, few set training teachers as a priority. Instead, a need existed to study

what and how students learned. As such, between the years of 1878-1919 twenty schools established doctoral degrees in education, and thirty-one institutions hired education professors. For many in the academic education research field, this era began research in education as known today (Johanningmeier & Richardson, 2008).

A third hypothesis, however, posited that education research's beginning established within a different field (Collins, 1998). The field of psychology first identified pedagogy and its measurable components as important fields of study. Indeed psychologist Edward L Thorndike hypothesized that "if a thing exists, it exists in some amount; and if it exists in some amount, it can be measured" (see Scates, 1947, p. 247). Moreover, he opined that the traditionally anecdotal education research methodology would eventually move toward quantitative measurements. Later his work and the works of Stanley G. Hall would revolutionize experiment methodology, and helped eliminate vagueness both within psychology and education experimentation. Both helped to establish and train many influential researchers of education in later years (Johanningmeier & Richardson, 2008).

Finally, it is important to mention that these three hypotheses do not constitute all aspects of early education research history. Some credit standardized achievement test, some The Common School origins (Davis, 2008), and other found insight from Charles Darwin (Lagemann, 2000). Taken together, however, this author believes the prominent begins derived from the prior three hypotheses.

Funding officially begins. Regardless of education research's debated beginnings, prior to the 1950's major education research funding was unavailable. In

fact, not until 1957, when the Soviet Union launched Sputnik, did the United States government attempt to fund research in education. The Eisenhower administration and Congress enacted the National Defense Education Act of 1958 that provided monies for education research and its researchers (Vinovskis, 2009).

Despite this increase in funding, however, education research in the 1950s and 1960s paled compared to other fields' research. Lazarsfeld and Sieber's (1965) investigation of research in education found that only small changes occurred in the twenty years prior while psychology and sociology researchers procured marked advancement.

Following Lazarsfeld and Siebers' (1965) survey and an outcry for the war on poverty, the Johnson administration sought to bolster education research and its funding. Indeed myriad education research programs created by his administration operate still today. The Johnson administration, among other programs, established the National Center for Education Statistics (NCES), the Educational Resources Information Center (ERIC), and the National Assessment of Educational Progress (NAEP). Together these programs sought to establish education records and garnered data often still utilized (Vinovskis, 2009).

In addition, the Johnson administration-established Garner Task Force recommended the creation of large-scale education laboratories. These laboratories dramatically increased education research funding, topping 100 million dollars in FY1967, but unfortunately invoked controversy and debatable results. Vinovskis (2009) stated that the results derived from the creation of multiple "modestly-funded

laboratories, focusing more on providing regional technical assistance and local services rather than long-term research and large-scale development” (p.52). Years later, the federal government, despite harsh criticism, still funds similar national education laboratories.

The 1970s and 1980s brought partisan politics into the national education research agenda. The Nixon administration established well-known national literacy and education programs such as Head Start and Follow Through. In addition, the National Institute for Education (NIE) was established. Following this increase in education research funding, however, the Reagan administration sought to decrease the government’s role in education by dismantling nationally funded education programs. Although the administration’s attempts to dismantle the Department of Education and NIE were thwarted, the administration successfully decreased education research funding from 1980-1984 by one-seventh (Verstegen, 1990). Glass (1987) argued that the Reagan administration’s tenure politicized education research and were often misleading. He argued that the administration produced reports, including the What Works report, which utilized only a portion of the more flattering research in education at that time.

Following the Reagan administration, several prominent education researchers reviewed the George H. W. Bush administration’s productions from national laboratories and academic literature. Vinovskis (1993) observed regional education laboratories and concluded that the work was often misguided and governed by regional boards with internal directions. Furthermore, Kaestle’s (1993) “The Awful Reputation of Education Research” chronicled major issues wrong with education researcher’s work. Kaestle

investigated over 25 years of education research and concluded that the field misused or failed to use effectively its research, often failed to evaluate itself properly, and lacked the dissemination practices other research fields utilized.

These observations by Kaestle, Vinovskis, as well as others lead to several important national reform issues. The administration established the Office of Educational Research and Improvement (OERI). Its reauthorization by the Clinton administration in 1994 led the OERI to establish research standards that intended to standardize and evaluate education research within both regional laboratories and academic settings. These included standards for application evaluation, program reviews, and financial assistance. Finally, Congress became skeptical of nationally-funded education researchers and vowed to remain cognizant of their progress. This criticism by Congressional leaders led to the largest education research reform in American history (Vinovskis, 2009).

No child left behind era. The years leading to No Child Left Behind (NCLB) remained fraught with angst for nationally funded education research and its researchers. One year prior to NCLB's enactment, Congress held further hearings to determine how to reform education and its research. Lawmakers and policymakers convened to establish standards and practices for education reform. Once again, some education researchers lobbied for increased change, and found advocates within Congress (Vinovskis, 2009). Still others were worried about Congress' ability to mandate research practices, and their ability to monitor the field (Feuer, Towne, and Shavelson, 2002).

Despite these issues, on February 27, 2002 President George H. W. Bush signed the No Child Left Behind act that mandated reform for education research and its researchers. Among the most controversial parts of NCLB were the federally mandated rigorous research standards, especially the emphasis on randomized experimental and quasi-experimental design, and its yearly progress reports within schools. In addition to enacting NCLB, the Bush administration established the Institute for Education Sciences (IES).

Through these mandated reforms, the Bush administration and Congress shifted the focus of funded education research almost exclusively to quantitative experimental and quasi-experimental methodology and design. Many in the field believed, however, that a government-run research reform imposed restrictions on the types of research that education required (Slavin, 2001).

The Field of Higher Education and the School of Education Researcher

Although much research and literature remains available on the history and culture of education research and higher education altogether, little information is available on the background, identity, or production of education's researchers. Despite prolonged efforts to embolden the science of education research, relatively little remains known of the individuals whom conduct research in education (Hedges & Hans-Martin, 2009). However, the following section seeks to elucidate the research on these individuals.

An ill-funded constituent. Education research remains no different from other academic programs: funding often reigns supreme. In a culture that thrives almost solely

on public and private expenditures, education research remains far behind other fields of research. For example, of the 300 billion dollars the federal government spends on education annually, only .01 percent, or 30 million, is allocated for research (Lienfner, 2003). In contrast, research heavy fields such as medicine and psychology typically spend 5-15% of their national allocations on research (Burkhardt & Schoefeld, 2003).

This dearth of national funding directly decreases the available funds for doctoral education research students. For instance, the National Science Foundation's standard setting science fellowships for the fiscal year 2004 averaged \$30,000 per student. The annual stipend for doctoral assistantships in education, on the other hand, averaged only \$6,800 (NSF, 2004).

Moreover, those averages merely reflect the students that received assistance. The National Center for Education Statistics (2002) reported that only 50% of education doctoral students received funding. In all other fields, 79% of doctoral students received funding. Often this disparity fosters a lack of research experience for education researchers. Indeed Eisenhart and DeHaan (2005) attributed this disparity to one of the major reasons researchers in education often trail their counterparts in other fields. Without first-hand opportunities to participate and create basic or applied research, it remains difficult for future academic researchers to produce effective primary research.

Finally, the problems with expenditure allocation are not limited to the amount, but also how funding for education research is received. Liefner (2003) examined the expenditure sources of universities in Switzerland, Europe, and the United States. In the two Swiss universities, at least 70% of resources were derived from direct non-

performance based public funding. Non-performance based public funding the authors described as funding that provided researchers the ability to conduct research without annually competing for grants or fear of losing funding because of lack of dissemination. The other 30% were received from private or public research grants. He also observed resource allocations from two large and well-known American research universities, University of Texas at Austin and the Massachusetts Institute of Technology. At the time of the sample, none of the resources derived from non-performance based direct public funding. In addition, over 70% of both schools research funding derived from either grants or endowment income (Liefner). These types of funding required researchers to annually (or every two-three years) compete for limited funds among a pull of other applicants. Often this type of funding was based on dissemination and findings.

To sum, Swiss and European universities directly contributed to non-performance based research, while American universities were forced to compete or rely on internal funding. Often this fostered an atmosphere of competition and short-term problem solving. Instead of working from study to study, expanding on a theory or testing alternative hypotheses, researchers simply competed for new money by creating new hypotheses. The competition for relatively small funds engendered research that was disaggregated and often incomplete.

Training future researchers. Funding characteristics and limitations provide merely a portion of literature on the education researcher. A great portion of information known about the field of education researchers derived from literature on training new education researchers. Indeed within the past years, several authors who sought to

improve education researchers' culture and quality wrote to persuade the industry to establish training norms (Burkhardt & Schoenfeld, 2003; Eisenhart & DeHaan, 2005; Pellegrino & Goldman, 2002).

Eisenhardt and DeHaan (2005) specifically called for guidelines that followed those of the natural sciences. The authors stated that the preparations of researchers in natural sciences followed strict curriculums and training that enabled the aspiring natural science researchers to be socialized in "the practice and norms of their disciplines in ways that other degree programs do not" (p.7). Following the natural sciences, these authors believed that in order to establish a clear identity, education researchers should establish sound fundamentals and follow strict curriculum. Through a more stringent curriculum and training program, however, an identity may be established.

Further, recent work by Levine (2007) called for explicit research-oriented doctoral program guidelines. In a comprehensive review of the Schools of Education programs throughout the country, Levine derived nine criteria that could be used to evaluate research-oriented programs. Each guideline required specific criterion met in order to meet a binary, yes/no, conclusion. The report cited Vanderbilt University as an exceptional education program that graduate between 8-10 researchers per year.

Other writers posited, however, that the field of education research is too diverse and complex to provide specific disciplinary training (Siegel,2006). In one of the few studies to examine part of the field of education research, Pallas (2001) examined the communities of education researchers and concluded that most schools of education are a combination of epistemologies. These epistemological combinations differ from those of

the natural sciences and thus should not simply copy their training programs. Instead, aspiring education researchers, the author stated, should be required to learn about the divisions within education researchers' epistemological backgrounds. This training would provide researchers with a better understanding of the field's beliefs and thus engender more productive work.

Finally, Henson, Hull, and Williams (2010) recently examined the role of the mentor in doctoral training programs. The authors stated that doctoral candidate mentors should contribute to candidate's training by instilling the benefits of a strong quantitative program. Through the examination of several recent meta-analyses of published journals (see Keselman, 1998), the authors concluded that strong quantitative training lacks in the field of education research. Often, the authors posited, mentors fail to play an active role in their students' quantitative training and therefore researchers tend not to utilize or at least fail to utilize properly the quantitative methodology. Further, increased mentor consciousness will encourage future researchers to learn the proper techniques and more effectively utilize the quantitative methodology.

Higher education productivity. Academic productivity research dated prior to today's conceptualization of the education research (Ben-David, 1960; Long, 1978; Long, Allison, McGinnis, 1979). Much of this early research focused on the field of higher education altogether, often commenting on the relationships between academic placement, career trajectory, gender and productivity. Although much of this literature was well outside the field of education research and the scope of this project, this

research elucidated a gender bias and general disparity among academics in their production (Long, Allison & McGinnis, 1993).

More recent literature utilized this previous research to understand further complex effects on academic productivity. Meng and Su (2006) focused efforts on understanding the effects of postdoctoral natural science training differences between men and women. The authors found significant differences, concluding that women, on average, tended to produce less research in the fields of science and engineering, and postdoctoral training did not temper this finding.

Further, Joy (2007) surveyed psychological science members about their academic production. In a survey of 1,216 faculty members of 96 schools, the author found that researchers at more prestigious universities produced greater amounts of research, and that males produced more published literature than females prior to tenure. The author also found, not surprisingly, that the total number of publications increased as a function of career age, however did not find significant effects when looking at per year rates.

Bland, Center, Finstad, Risbey, and Staples (2006) utilized the National Study of Postsecondary Faculty dataset of 1999 to examine the relationships between tenure and academic production. The authors hypothesized that a dearth of tenure-track positions would hamper the opportunities to produce and disseminate impactful basic research and cautioned against the newer, low-cost non-tenure track positions that have become increasingly popular. The authors' results revealed that tenured faculty indeed produced significantly more annual published research compared to non-tenured professors. In

addition, the authors examined the roles of professors, and found that tenured professors stated that their primary role at their respective institution was teaching. Non-tenured professors also answered that their primary roles were teaching but also a significant portion stated that their primary role was administration.

Despite research on the field of higher education's productivity, little research remained available about the field education research specifically. This phenomenon appeared more pronounced when one considered the vast array of education literature. The government-run resource that collects education research, Educational Resource Information Center (ERIC), includes over 700 unique education publications. Through this online database researchers have access to the top education literature within the community. These include *The Journals of Education Policy*, *Education Psychology*, and *Education Sociology*; not to mention publications that address specifically the researchers themselves within *Education Digest*, *Education Today*, or the appropriately named *Educational Researcher* (ERIC, 2009).

Yet countless education journals, literature, and science, little empirical evidence is available about the education researcher community. Little information is known concerning the average gender, race, background, or production of education researchers. Further, information regarding what types of research these researchers produce as well as where these researchers publish literature is of paramount importance.

This phenomenon of little community information requires a representative examination and straightforward explanation. As Finn (1991) wrote, "not since Sputnik has the hunger for education reform been so urgent or the need for our efforts so great"

(p. 40). It is thus this author's intention to investigate and examine the field of education researchers. To be clear, the author's research questions remained: 1) who are the individuals that conduct education research within Schools of Education, 2) what types of training did they receive and how did that training affect their current research, 3) how much research are they producing and who is producing the most literature.

CHAPTER THREE

METHODS

Participants

The author's target population was university professors from Schools of Education. Specifically, this author proportionally, and stratified- randomly selected universities from the Carnegie Foundation's "very high research activity" classification. These doctorate-granting universities include only institutions that award at least twenty doctoral degrees per year (McCormick, 2005) and generally house researchers of the highest productivity (Levine, 2007). Recently the Carnegie Foundation modified their classification system to describe the field based on a number of criteria. Despite this taxonomical change, the standard university description still derives from the original classification (Doyle, 2006; McCormick & Zhao, 2005). Therefore, the author's population was chosen from the original taxonomy.

Stratas were determined based on a geographical location. Three stratas constituted the sample: east, central, and west. The east region was represented all east coast schools up to the Ohio border; central region was represented by Ohio west to Colorado; west was represented from Colorado to the western coast.

Further, some exclusion criteria applied. First, only universities that housed a School, College, or Department of Education were included. Second, this author excluded all individuals who worked at these universities, but did not possess a doctoral

degree. Further, all research assistants, consultants, and various other staff members were excluded. No other exclusion criteria (e.g. age, gender, race, etc.) were applied. If by chance any individual that did meet the exclusion criteria obtained and completed the survey, then that individual was deleted from the analysis.

Instrumentation

The author created the “Education Researcher Identity Survey” (ERIS) specifically for this project. The ERIS included thirty-four items (see Appendix A).

The process to create this survey proceeded with a few steps. First, the author found a dearth of information on the field of education research. Most of the literature concluded that the understanding of the field education research was anecdotal and without empirical evidence. Moreover, no information could be found on the individuals who conducted research in education and what types of research they produced. Thus, the author created a relatively smaller survey to address these finer points.

Second, the author discussed the smaller survey with the thesis committee. After some contemplation, the author and committee decided to expand the survey to include items on training, productivity, types of research conducted, and many other fields. Third, a number of individuals reviewed and edited it for misleading or uninformative questions. Finally, the survey was given to two faculty members to assure its content was accurate and the items were straightforward.

The survey itself consists of several parts. Basic survey demographic questions constituted a portion of the survey. The survey inquired about gender, university setting,

years employed at the university, doctoral degree matriculation and type, position, tenure, and specific department.

A second section asked professors to describe their doctoral training and current practices. For example, two of the items addressed the professor's doctoral training and its epistemological foundations. Further, the survey asked professors to indicate their usage of different types of research that best described his or her research production in the past five years. In addition several of the items inquired about the fundamental methodologies generally employed by his or her research.

The last section specifically addressed academic production. Academic production was operationalized as the number of journal articles, books, presentations, and reviews that the professor completed over the last five years. This section also asked professors to distinguish between education and non-education publications.

It should be mentioned briefly that no pilot studies were conducted on the survey to test its psychometric properties. Should the author conduct additional research using this survey then psychometric tests will be conducted.

Procedure

Data administration and collection remained simple and straightforward. After Loyola University IRB approval, this author utilized Opinio online survey software to administer the survey. The online survey benefits outweighed paper surveys because it ensured wide publication, immediate access, relative speed, and little to no data input or manipulation.

Although Opinio utilization remained simple, the sampling procedure was more complex. This author began by searching for Schools, Colleges, or Departments of Education within the ninety-six Carnegie Foundation “very high research activity” universities. This author then arbitrarily divided the United States into three strata: East, Central, and West. Following the stratified random sample design (Shadish, Cook, and Campbell, 2000) and using a random number generator, this author proportionally and randomly selected twelve universities from the east, ten universities from the central strata, and eight universities from the west region.

Following these procedures, this author located all SOE professors’ email addresses. Individualized emails that utilized a standardized template were then sent to each professor. This email included a brief project summary, contact information, and a link to the Opinio survey (see appendix B).

A second email was then sent to the professor if he or she did not complete the survey within two weeks. If the professor did not complete the survey following two weeks after the second email, then the survey was closed. The survey was closed for completion on March 10th, 2010. All data collected from professors who took the survey was then downloaded for analysis from Opinio into Excel and SPSS.

Analysis

This author completed several statistical analyses. First, this author described the sample and its members through basic descriptive statistics analysis. This analysis remained paramount to the overall research question because it reported information that often is unavailable.

Second, this author observed and reported epistemological training and methodologies. These beliefs were then analyzed to understand further the relationship between training and research type utilized.

Third, this author conducted a two-way MANCOVA to examine the effects of academic type and epistemological training on academic production after controlling for years since matriculation, courses taught per year, and years at current university. In addition, post-hoc analysis was also conducted to examine the specific effects of academic type and epistemological training on academic journal production.

CHAPTER FOUR

RESULTS

Sample

Response rate. The author sent 2,723 survey invitations to School of Education professors within the Carnegie Foundation’s “very high research activity” institutions. One hundred and seventy-eight of the sent emails returned as incorrect email address, sixty returned as out of the office, and forty-one directly replied that they were no longer employed at the university, retired, or no longer working on education projects. As such, the total potential participants were 2,444 (see table 1). A total of 543 professors responded to make the relative response rate 20.6%. Not surprisingly, however, not all participants answered all items and a portion answered only the first question prior to quitting the survey; thus the analysis sampled generally totaled 478 professors.

Table 1: Recruitment Email Total and Final Response Rate

	N	%
Recruitment Total	2723	-
Email returned incorrect/ no longer in	178	6.5
Out of office	60	2.2
No longer employed at	31	1.1
No longer working in education	10	0.3
Final Recruitment Total	2444	89.7
Respondents	543	
Final Total Response Rate	22.2%	

The sample consisted of professors from thirty different universities. Raw responses ranged from only one participant (Brown University) to forty-three participants (University of Minnesota.). The University of California at San Diego had the highest raw response rate (n=28, 34.2%). The average raw response rate per school was 19.0%.

Sample characteristics. Tables (2) and (3) delineated the demographics of the sample collected. Two hundred and seventy four (57.3%) of the total were female. The vast majority received a PhD (n=404, 81.0%) in Education (n=288, 57.1%) or Psychology (n=63, 12.5%). In addition, the sample consisted of varied age and tenured professors. Although the largest proportions of professors represented were those that received their degrees between the years of 2001-2010 (31.0%), the sample also included individuals that received doctoral degrees in the 1950s and 1960s. Date of tenure also varied widely, however most individuals received tenure from 2001-2010 (n=90, 33.3%). A majority of those who participated indicated that they currently hold tenure (n=264, 57.0%). The average time to tenure for this sample was 8.38 years.

Further, seven different academic positions participated in the survey: 1) adjunct professor, lecturer, instructor, or postdoctoral (n=28, 5.2%), 2) clinical professor (n=30, 6.3%), 3) assistant professor (n=118, 25.0%), 4) associate professor (n=119, 25.2%), 5) full professor (n=144, 30.4%), 6) distinguished professor (n=22, 4.7%), and 7) professor emeritus (n=11, 2.3%) (table 3). Thirty-three mutually exclusive education departments were also represented; the department of Curriculum and Instruction represented the largest proportion (n=70, 13.9%).

Table 2: Sample Characteristic- Gender, Year Graduated, Degree, Type, Tenure

	N	%
Gender		
Male	204	42.7
Female	274	57.3
Year graduated		
1950-1970	22	4.2
1971-1980	82	16.3
1981-1990	88	17.5
1991-2000	111	22
2001-2010	156	31.0
Degree		
PhD	404	81
EdD	73	14.6
Degree type		
Education	288	57.1
Psychology	63	12.5
Educational psychology	41	8.1
Sociology	10	2
Statistics, Evaluation, or Research Methodology	6	1.2
Higher education or Special education	6	1.2
Human Development	5	1
Other	42	8.7
Did not respond	41	8.1
Tenure		
Currently hold tenure	264	57
Currently do not hold tenure	199	43
Year awarded tenure		
1950-1970	3	11.1
1971-1980	28	10.4
1981-1990	65	24.1
1991-2000	84	31.1
2001-2010	90	33.3

Table 3: Sample Characteristics- Academic Position, Academic Department

	N	%
Academic position		
Adjunct, Lecturer, Instructor, or Postdoctoral	28	5.2
Clinical Professor	30	6.3
Assistant Professor	118	25
Associate Professor	119	25.2
Professor	144	30.4
Distinguished Professor	22	4.7
Professor Emeritus	11	2.3
Academic Department		
Administration and Supervision	8	1.6
Counseling Psychology	19	3.8
Curriculum and Instruction	70	13.9
Educational Leadership, Organization, or	37	7.3
Educational Policy	27	5.4
Educational Psychology	49	9.7
Higher Education	21	4.2
Human Development	18	3.6
Kinesiology	14	2.8
Language	5	1
Research Methodology, Statistics, or	13	2.6
School Psychology	12	2.4
Secondary Education	5	1
Special Education	30	6
Teacher Education and Preparation	42	8.3
Teaching and Learning	20	4
Urban Education	3	0.6
Other	32	6.3
Did not respond	60	11.9

Types of Research, Designs, and Epistemologies

Types of research. A portion of the items focused on broad types of research that professors utilized (Johnson & Christensen, 2005). The most utilized type of research reported by this sample was applied research; 44.6% (n=186) of professors answered that all or the majority of their published research was this type. The next

indicated type was basic (n=90, 20.8%). The least used research type was orientation/critical. See figure (1) for complete results.

Quantitative and qualitative designs. The survey also asked participants to indicate the quantitative and qualitative designs they used. Professors indicated that they used nonexperimental or quasi-experimental designs all or the majority of the time (29.9% and 17.3%, respectively) more than experimental or meta-analysis (10.8%, 1.9%, respectively). Not surprisingly, 58.8% of professors indicated that they had never used experimental design. See figure (2) for complete results.

Figure 1: Types of Research Utilized

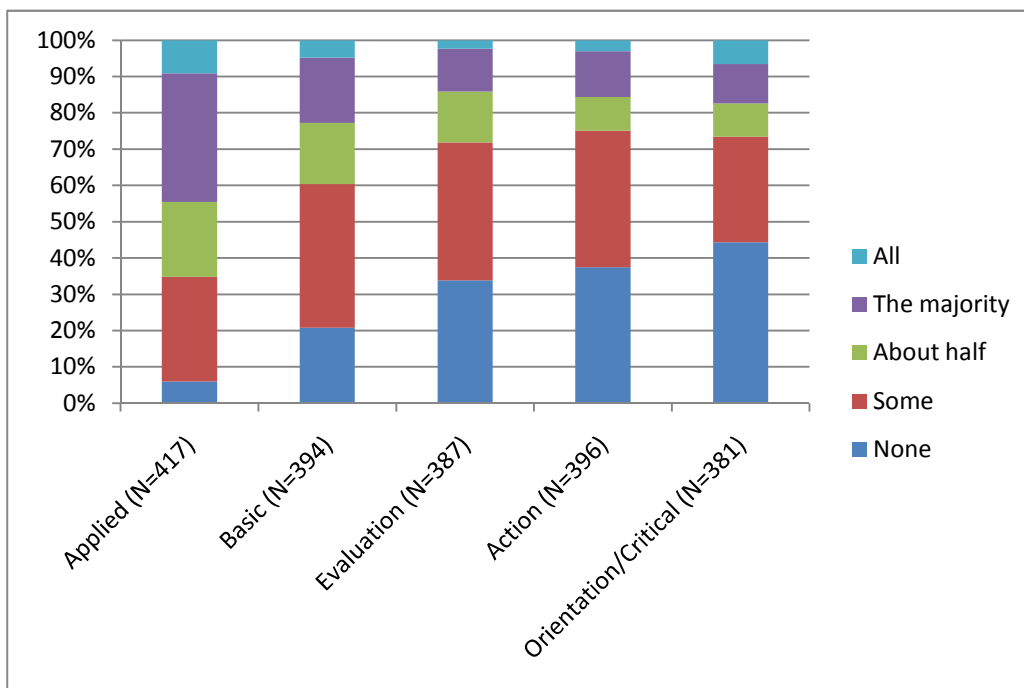
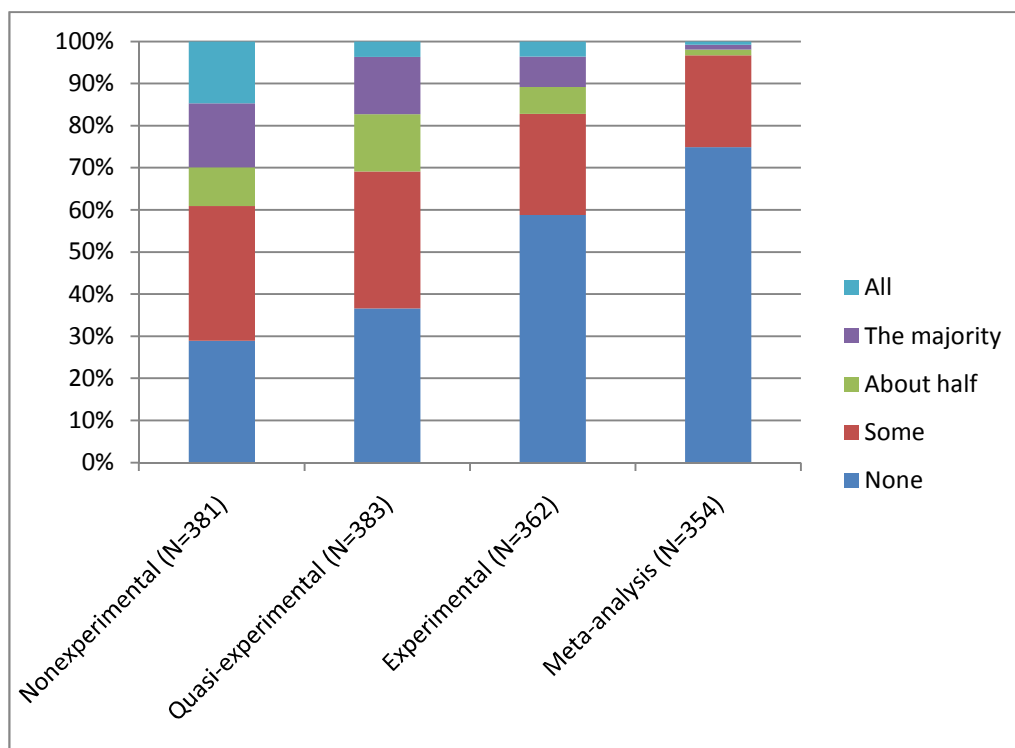


Figure 2: Quantitative Designs Reported from Overall Sample

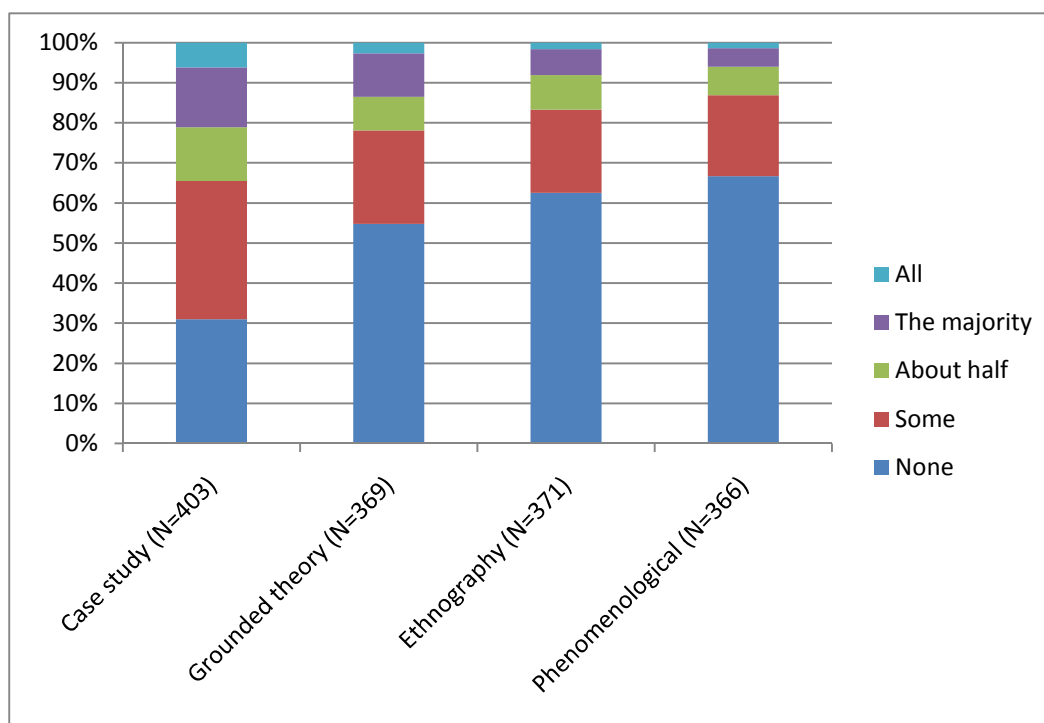


In addition, survey items inquired about qualitative designs that the respondents utilized. Case study constituted the qualitative design that most professors responded to using the majority or all of the time ($n=83$, 20.7%). The qualitative design of phenomenology constituted the least used methodology; only 6.0% of professors indicated that they used it the majority or all of the time and 66.7% indicated that they never used the design. In fact, aside from case study, the majority of professors indicated that they never used any of the qualitative designs.

Design by academic position. To decipher further who utilized what types of designs, this author conditioned each design by academic type. For this analysis this author used only responses from assistant professors (AP), associate professors (AS), full

professors (FP), and distinguished professors (DP). These four academic types constituted the vast majority of the sample (n=403, 85.3%).

Figure 3: Qualitative Designs Reported from Overall Sample



This conditioning revealed a number of interesting quantitative design results (see figure 4). To begin, full professors and distinguished professors utilized experimental designs to a much greater extent than associate or assistant professors. In fact, less than 7% of assistant or associate professors indicated that they used experimental design a majority or all of the time. On the other hand, nearly 14% of professors indicated that they used experimental design a majority or all of the time.

The responses to the nonexperimental design item also revealed divergent results. A near majority of distinguished professors indicated that a majority or all of their research was nonexperimental (47.0%). Less assistant and associate professors indicated

that most or all of their work was nonexperimental (31.5% and 34.4%, respectively). Full professors responded with the least amount of their work being nonexperimental (25.2%).

The analysis revealed interesting results for quasi-experimental and meta-analysis as well. Professors indicated that they used quasi-experimental a majority or all of the time more compared to all other academic types. However, assistant professors and associate professors indicated that they used meta-analysis all or a majority of the time at a greater rate than all other academic types (AP and AS=2.2%, FP=0.9%, DP=0.0%).

In addition to quantitative designs, this author also conditioned qualitative designs by academic type. First, assistant professors answered that a majority or all of the time they used case study designs more than any other academic type (AP=22.3%, AS=18.6%, FP=16.9%, DP=21.0%). Second, distinguished professors indicated that they used ethnography at a greater rate than other academic types (AS=6.5%, AS=9.8%, FP=4.1%, DP=11.2%). Third, the other qualitative designs professors differed by less than one standard deviation.

Finally, chi-square tests of independence were calculated for each of the eight 4 x 4 contingency tables. The chi-square test of independence observes the expected versus the given frequencies to provide information on variable dependence. A large chi-square statistic provides information against the null and thus one can assume model dependence (Agresti, 2007). None of the results were associated the outcome and therefore research design did not differ on academic position (see table 4).

Figure 4: Quantitative Design by Academic Position

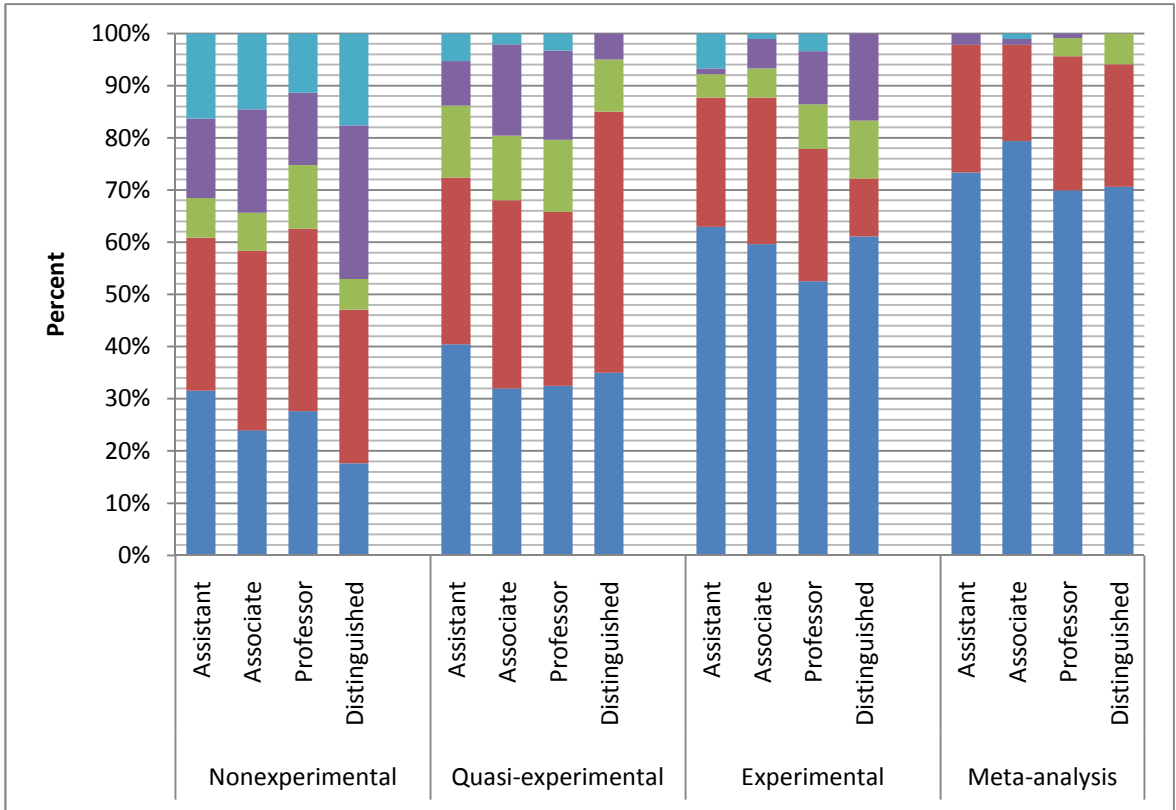


Figure 5: Qualitative Designs by Academic Position

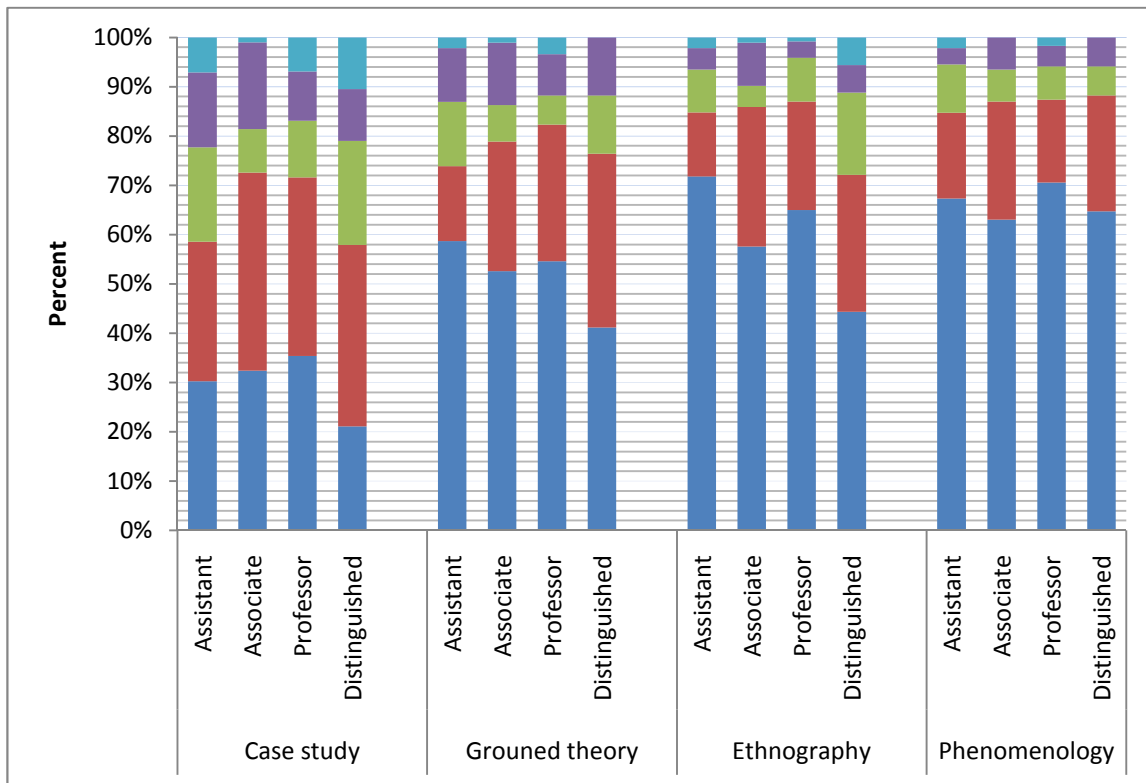


Table 4: Chi-square Test of Independence Values for each Design Table

Design	X ² value	p-value
Nonexperimental	8.32	.76
Quasi-	10.34	.59
Experimental	18.48	.10
Meta-analysis	12.65	.40
Case Study	17.00	.15
Phenomenology	6.43	.89
Ethnography	17.16	.14
Grounded theory	11.75	.47

Epistemology Training. A series of items asked participants to describe their research training and epistemological beliefs. For example, one item asked individuals

“Your doctoral research training courses mainly consisted of: quantitative courses, qualitative courses, completely even 50/50 split.”

The author conducted a number of analyses that utilized this data. First, the author conducted a descriptive analysis to observe what types of research individuals performed conditioned on their epistemological training. For ease of interpretation, the author combined the “some” and “half” responses to create a “1%-50%” category as well as the “majority” and “all” responses to create a “51%-100%” category. Figures (7 & 8) displayed the raw response frequencies for the quantitative and qualitative designs. Each 3x3 table then represented how many professors conducted each type of research based on his or her research training.

Figure 6: Epistemological Training by Quantitative Research Type Utilized

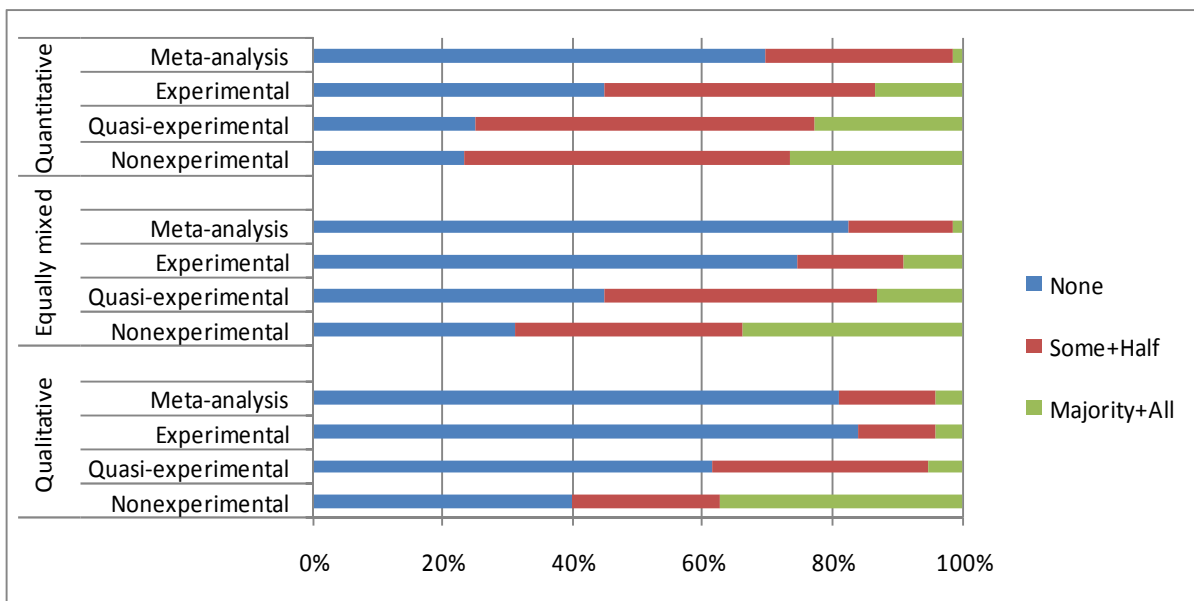
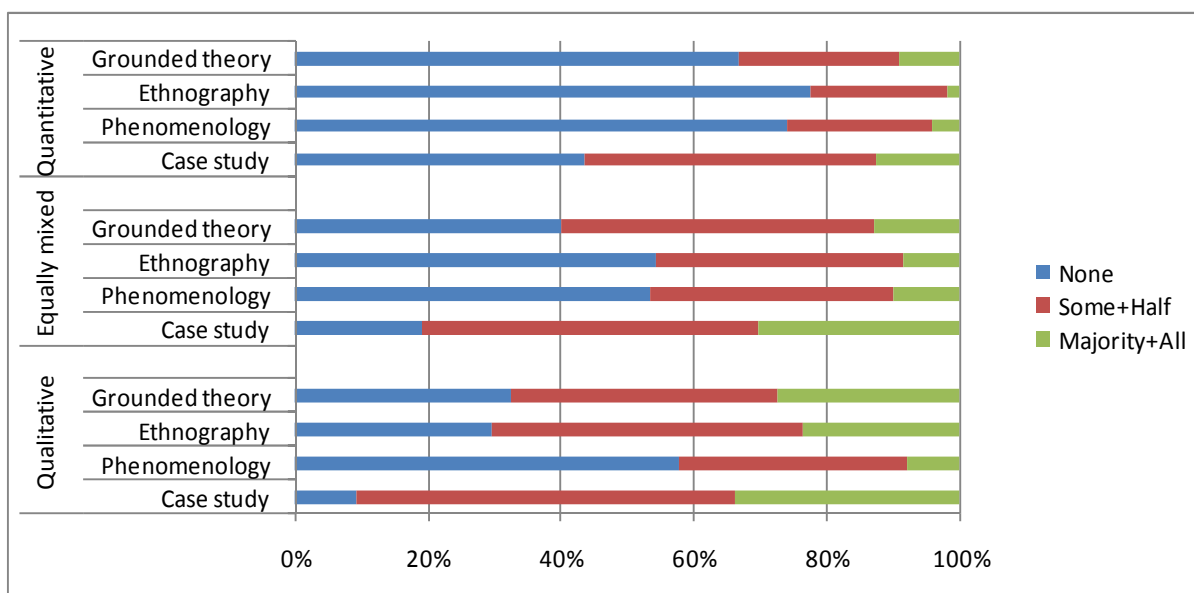


Figure 7: Epistemological Training by Qualitative Research Type Utilized



An initial inferential analysis utilized the chi-square test of independence. As mentioned previously, a large chi-square indicated evidence against the null hypothesis and variable dependence. As table (5) indicated, all four 3x3 tables revealed dependence and thus it was appropriate to model the data.

Table 5: Chi-square Test of Independence Values for Epistemology by Type

Design	χ^2 Value	p-value
Nonexperimental	19.72	0.001
Quasi-	38.58	0.001
Experimental	44.35	0.001
Meta-analysis	10.11	0.039
Case Study	48.81	0.001
Phenomenology	14.13	0.007
Ethnography	73.34	0.001
Grounded theory	40.56	0.001

*All models evaluated with 4 dfs

Agresti (2007) detailed that ordered response categorical data should utilize a cumulative logit model. A cumulative logit model assumes that: a) data are categorical and ordinal, b) the effect of the independent variable (β) is the same for every category. For example:

$$\text{logit}[P(Y \leq j)] = \alpha_j + \beta x \quad j=1, \dots, J-1$$

where Y equals the response, j equals the category of response, alpha represents the intercept of the category of response, and beta represents the effect of x on the log odds of response in the category j or below. Therefore this model represented the effects of a professor's epistemological training on the amount of each type of research he or she conducted.

Table (6) delineated the model goodness of fit, estimated probabilities, and exponential beta for each of the four design models considered traditional quantitative and qualitative research designs (i.e. experimental, quasi-experimental, case study, and grounded theory). Each of the four models provided sufficient fit to interpret the results. In addition, this author conducted Fisher's score test on each of the beta coefficients to assure proportional odds, and none of the parameters were found to be significant. Therefore it was appropriate to assume equal effects of beta on each of the categories.

The estimated probabilities revealed results that should be expected because of the raw frequencies. In each of the four models, the probability of conducting quantitative or qualitative designs increased as the professor increased the level of training doctoral training.

Table 6: Cumulative Logit Estimated Probabilities, Parameters, and Model Fit

Design	Training	None	1%- 50%	51%- 100%	χ^2 (p- value)	exp(B)	CI (lower, upper)
Exp.					4.32 (.23)	0.381	(0.277, .524)
	Qual.	0.856	0.119	0.025			
	Equal	0.697	0.242	0.061			
	Quant.	0.464	0.388	0.147			
Quasi					.43 (.93)	0.454	(0.351, .587)
	Qual.	0.621	0.319	0.059			
	Equal	0.427	0.451	0.122			
	Quant.	0.253	0.513	0.234			
Case					6.40 (.08)	0.445	(0.348, .567)
	Qual.	0.122	0.387	0.491			
	Equal	0.230	0.538	0.232			
	Quant.	0.416	0.468	0.119			
Grounded					4.12 (.28)	0.474	(0.369, .608)
	Qual.	0.300	0.422	0.279			
	Equal	0.474	0.371	0.155			
	Quant.	0.656	0.265	0.080			

For example, a participant who indicated that he or she received mainly qualitative training had an estimated probability of .491 that 51-100% of their published research were case studies. Further, a participant who received mainly quantitative training had an estimated probability of publishing only the majority of their work in case studies was only .119. Individuals who received equally mixed training's estimated probability that the majority of their research was case studies was in between the two probabilities, .232.

The estimated probabilities, however, only provided a portion of the analysis. Indeed the log odds beta remained the more practically relevant finding. As mentioned previously, each of the four models revealed a proportional odds beta that can be interpreted as the effect of the type of training one received on the likelihood of

producing none of that epistemological type of research. To interpret this statistic, the exponential beta was provided. This statistic indicated that the more training one had opposite of the outcome (i.e. qualitative training modeling quantitative research use), the less likely that individual was to produce that type of research. In other words, the probability that an individual conducted none of his or her research in the type of field they trained in decreased the more they received that type of training. For example, an individual who received mainly quantitative training was 62% percent less likely to produce no experimental research than an individual who was trained equally between the epistemologies. Although the effect was greatest for experimental design, all four models produced similar results and have high confidence interval overlap. Therefore it was appropriate to assume that the effect of doctoral training was the same for each of the design types.

Research Dissemination

Academic position and epistemology. The survey's last items asked participants to indicate how many peer-reviewed journal articles, book chapters, and presentations they published in the previous five years. Considering the entire sample, participants indicated that they produced, on average, 9.47 total journal articles over the last five years ($\sigma^2=8.32$, range 0-50), produced 3.41 total book chapters ($\sigma^2=3.62$, range 0-25), and presented at 14.14 total conferences ($\sigma^2=12.78$, range 0-100).

A descriptive analysis was then conducted that conditioned on academic position. The four academic position categories initially derived from the previous analysis (assistant professors (AP), associate professors (AS), full professors (FP), and

distinguished professors (DP)) were again utilized, however, due to small number of DP cases ($n=20$), this author formed one group of full professors and distinguished professors (FD). In addition, this author also included the results of the clinical professors, adjunct professors, lecturers, instructors, and postdoctoral candidates combined to form one group (CP).

Table (7) provided the means and standard deviations of these results. On average, FPs produced more journal articles ($\mu=12.57$, $\sigma^2=9.55$), more book chapters ($\mu=4.82$, $\sigma^2=4.19$), and attended and presented at more academic conferences ($\mu=16.83$, $\sigma^2=15.63$) than any other academic position. Furthermore, the average publications increased at every academic level.

Table 7: Average Dissemination by Academic Positions

Academic Position	Journal Articles	Book Chapters	Conference Presentations
CP (N=42)	2.48 (2.55)	.54 (.90)	6.79 (6.88)
AP (N=101)	7.16 (5.92)	2.04 (2.27)	12.14 (8.36)
AS (N=101)	10.88 (7.75)	4.01 (3.45)	15.93 (12.55)
FD (N=144)	12.57 (9.55)	4.82 (4.19)	16.83 (15.63)

() represent standard deviation

This author also conducted a second descriptive analysis that utilized epistemological training used in prior analyses (see table 8). Individuals who were trained mainly quantitatively produced, on average, the most journal articles ($\mu=10.95$, $\sigma^2=8.72$), the most book chapters ($\mu=3.41$, $\sigma^2=3.39$), and presented at the most academic conferences ($\mu=14.75$, $\sigma^2=13.00$) compared to the other two types of training epistemologies.

Table 8: Average Dissemination by Epistemological Training

Epistemological Training	Journal Articles	Book Chapters	Conference Presentations
Qual. (N=84)	6.78 (6.94)	3.34 (3.32)	12.37 (11.47)
Equal (N=79)	8.03 (7.47)	3.36 (4.40)	13.96 (13.58)
Quant (N=228)	10.95 (8.72)	3.41 (3.39)	14.75 (12.998)

() represent standard deviation

MANCOVA analysis. To test the effects of epistemology training and academic position on dissemination, this author conducted a 2 x 3 between-subjects multivariate analysis of covariance (MANCOVA) on the three dependent variables: journal article publication, book chapter publication, and academic conference presentations.

Additional adjustments were made for three covariates: years since doctoral degree awarded, years since began at current university, and average number of courses taught per semester. MANCOVA analyses were appropriate since the outcomes all were continuous, the IVs categorical, and covariates continuous and linearly related to the outcomes. The model can be represented by :

$$Y_i = \alpha_i + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_1 x_1 * \beta_2 x_2$$

where: Y_i represented the i th outcome, α_i represented the intercept of the i th outcome, $\beta_1 x_1$ represented the effect of academic position, $\beta_2 x_2$ represented the effect of epistemological training, $\beta_3 x_3$, $\beta_4 x_4$, $\beta_5 x_5$ represented the covariance effects of years since doctoral degree, years since began at current university, and average number of courses taught, respectively, on the i th outcome, and $\beta_1 x_1 * \beta_2 x_2$ represented the interaction between the two main effects.

A total of 359 cases were used in this analysis. According to Tabachnick and Fidell (2007), at least 20 cases per cell were required to find robust effects. The lowest cell count for this analysis was the CP group, but it had a total of 39. Therefore unbalanced sample sizes were no longer a concern. The homogeneity of variance-covariance assumption can also be relaxed due to the large sample size. Further, the assumptions of normality, linearity, and multicollinearity were also deemed satisfactory. Covariates were judged to be reliable and this author found no significant interactions between the covariates and main effects.

This author conducted a MANCOVA using Wilks' criterion (table 8). None of the covariates were found to be significantly related to the combined DVs, approximate $F(3, 348) = .62, p > .05$, to years since degree awarded, $F(3, 348) = 2.41, p > .05$ to years at current university, and $F(3, 348) = .05, p > .05$ to average classes taught per semester. Partial η^2 were also calculated for the covariates and found to vary between .000 and .020; the most variance associated to years at current university. Further, both of the main effects were found to be significantly related to the combined DVs after adjustment for the covariates. A significant main effect for academic position was found, $F(9, 847) = 8.96, p < .05$ as well as for epistemological training, $F(6, 696) = 2.58, p < .05$. Somewhat larger associations were found between the combined DVs and the main effects compared to the covariates (position $\eta^2 = .071$, training $\eta^2 = .022$, respectively).

Generally a second MANCOVA omnibus test would be utilized to investigate the effects of the covariates on the DVs and conduct a Roy-Bargman step-down analysis. As revealed previously, none of the covariates had a significant multivariate effect on the

Table 9: Multivariate Omnibus Test for Main Effects and Covariates

IV	F	df	p-value	partial η^2
Main effects				
Academic position	8.96	9/847	.001	.071
Training	2.58	6/696	.018	.022
Covariates				
Years since degree awarded	.62	3/348	.605	.005
Years at current university	2.41	3/348	.067	.020
Average classes taught per	.048	3/348	.986	.000

DVs and therefore this was not conducted. Further, the DVs were highly correlated (above .45 each) and therefore the Roy-Bargman step-down univariate analysis was again not appropriate.

As such, this author next investigated the effects of academic position and epistemological training on the highest priority DV, journal publication, after adjustment for the covariates through univariate ANCOVA. Table (10) reported each of the univariate analyses, however, the results for the DVs of book chapter publication and conference presentations should be interpreted with caution. In addition, to account for multiple comparison type 1 error, the author set an alpha rate of .01. Therefore the (*) constitute significant univariate relationships with a p-value less than .01 and not the typical .05 level.

The univariate ANCOVA revealed several findings of interest. First, after controlling for covariates, academic position and epistemological training was associated with journal articles, approximate $F(3) = 17.57$, $p=.016$ to academic position and $F(2) = 4.17$, $p=.016$ to epistemological training.

Table 10: Tests of Main Effects and Covariates on Univariate DVs

IV	DV	Univariate F (df)	p-value	partial η^2
Main effects				
Academic Position	Journal	17.57 (3)	.001*	.131
	Book chapters	21.05 (3)	.001*	.153
	Conference	8.54 (3)	.001*	.068
Training	Journal	4.17 (2)	.016*	.023
	Book chapters	1.12 (2)	.327	.006
	Conference	.209 (2)	.811	.001
Covariates				
Years since degree awarded	Journal	1.13 (1)	.288	.003
	Book chapters	.104 (1)	.747	.000
	Conference	1.30 (1)	.255	.004
Years at current university	Journal	4.05 (1)	.045	.011
	Book chapters	5.79 (1)	.017	.016
	Conference	1.55 (1)	.214	.004
Average classes taught per	Journal	.005 (1)	.944	.000
	Book chapters	.045 (1)	.833	.000
	Conference	.045 (1)	.831	.000

This author utilized more stringent significance values using the Bonferroni method to adjust for multiple comparisons. In addition, effect sizes also revealed that academic position was more strongly associated with journal article publication ($\eta^2=.131$) compared to epistemological training ($\eta^2=.023$).

Second, after adjusting for covariates, the effect of academic position was also found on book chapter publication, $F(3) = 21.05$, $p=.016$, and conference presentations, $F(3) = 8.54$, $p=.016$. Effect sizes revealed similar relationships with the DVs as found for journal articles (book chapter $\eta^2=.153$, conference presentation $\eta^2=.068$). However, this author found no evidence to reject the null hypothesis of epistemological training on the DVs of book chapters and conference presentations. Finally, as mentioned previously,

the results for the book chapter and conference presentation DVs should be interpreted with caution because of the high correlation between the three DVs.

Final post-hoc comparisons were also made to investigate further the relationships between the main effects and DVs. Table (10) reported only statistics from the post hoc comparisons of the DV journal article because all other results were deemed unreliable. Adjusting for multiple comparisons using Bonferroni type adjustment, this author found significant group differences between all academic positions except for AS and FP. In addition, significant differences were also found between qualitative trained and quantitative trained researchers on the journal article DV. Taken together, after adjusting for covariate measures tenured professors who were trained mainly quantitatively produced significantly more research than all other academic positions and epistemological trainings.

Table 11: Multiple Comparisons of Main Effects on Journal Article Production

IV	Level I	Level J	Mean difference (I-J)	p-value	CI of difference
Position					
	CP	AP	-3.88	.048	(-7.75, -.02)
		AS	-8.89	.001	(-12.81, -4.96)
		FP	-11.39	.001	(-15.82, -6.95)
	AP	CP	3.88	.048	(.02, 7.75)
		AS	-4.99	.001	(-8.25, -1.75)
		FP	-7.51	.001	(-11.63, -3.38)
	AS	CP	8.83	.001	(4.96, 12.80)
		AP	5.00	.001	(1.75, 8.25)
		FP	-2.51	.214	(-.647, 5.67)
Training					
	Qualitative	Equal	-.51	1.00	(-3.44, 2.41)
		Quantitative	-2.65	.030	(-5.11, -.19)
	Equal	Qualitative	.51	1.00	(-2.41, 3.44)
		Quantitative	-2.14	.130	(-4.67, .40)

CHAPTER FIVE

DISCUSSION

Summary

The purpose of this thesis was to investigate and examine critically the individuals who conduct research in the field of education. Specifically, this thesis' focus was on School of Education Professors within the Carnegie Foundation's "very high research activity" (formerly known as type 1) research institutions. A total of 543 professors from 30 stratified and randomly selected research type 1 universities responded to an online survey request and completed items that asked about their academic history, preferred methodologies, and dissemination.

Information from the survey produced a wealth of knowledge and modeling opportunities. First, this author examined the descriptive sample to explore the composition of the field. The sample consisted mainly of females who received a PhD in Education, graduated with their doctoral degree and held tenure received over the last 10 years. Further, most participants were full professors, although associate and assistant professors had a high response rate as well, and worked in a curriculum and instruction, teacher education and preparation, or educational psychology department.

Second, this author explored the types of research designs professors of Schools of Education utilized. Generally, researchers stated that they used applied research design, and most indicated that they utilized nonexperimental quantitative and case study

qualitative designs. Further, this author investigated academic position and research designs. Non-tenured professors (AP) utilized case studies while tenured professors (AS or FP) utilized grounded theory. Full professors utilized experimental design slightly more than all other academic professors. However, it should be noted that chi-square tests of independence were conducted on all academic position by research design contingency tables and none were statistically significant as well. Therefore, academic position and research design were not related.

Third, the author conducted an analysis to investigate the relationship between academic doctoral training and academic research. A cumulative logistic model appropriate for analyzing discrete multimodal outcomes was used to investigate specifically the effect of epistemological training (i.e. quantitative or qualitative) on research epistemologies. A portion of the items asked participants to assess how much of their published research over the last five years was experimental design, quasi-experimental design, case study, or grounded theory. Four mutually exclusive models revealed similar results: the type of training one received as a doctoral candidate statistically significantly and practically effects how much and what type of research designs one used. For instance, the odds of producing a case study increased over 120% between mainly quantitative and mainly qualitative trained researchers. Indeed results remained similar in the three other models as well.

Fourth, the author investigated the effects of academic position and epistemological training on journal article publication, book chapter publication, and academic conference presentations. A 2 x 3 MANCOVA appropriate for multiple

continuous outcomes with main effects and multiple covariates was utilized. The results revealed that after controlling for years since matriculation, years at the current university, and number of courses taught per year, academic position and epistemological training were both significantly related to the combined DVs. Because the outcomes were highly correlated, the author cautiously discussed the main effects on journal article dissemination. Post hoc analyses revealed that significant dissemination differences existed between CP and AP positions and tenured professors, but tenured professors, specifically AS and FP, did not differ significantly. Further, participants that were trained mainly quantitatively produced more journal articles than individuals trained mainly qualitatively.

Impact on Recent Research

This author explicitly mentioned previously that little information existed that described the researchers of education. Hence, several education researchers and authors called upon an evaluation and description of the field (Hedges & Hans-Martin, 2009; find other). Specifically, Pellegrino and Goldman (2002) argued that both individuals and institutions must build a professional community to describe and disseminate their works in the past.

Although the American Education Research Association has focused on growing the community, this thesis attempted to expand explicitly on those previous calls. Indeed this author believes that this project accomplished this task by increasing the field's knowledge of its logistical landscape. Through the use of a nationally-representative stratified random sample, information often overlooked or under-published was received

and analyzed. The descriptive results revealed that a new generation of education researchers is within the top research producing communities and the majority of them received specific education research training. These individuals occupy a variety of departments, are rapidly receiving tenure, and producing varying types of research.

Education researchers called further for training guidelines and strong quantitative reasoning and methodologies. Eisenhart and DeHaann (2005) argued that because of new federal guidelines in No Child Left Behind, new researchers required advanced quantitative training. Further, Henson, Hull, and Williams (2010) stated that the quantitative training of future researchers will influence heavily the research they produce in their own careers. Although both studies argued convincingly that quantitative training was needed and impactful, neither of the studies could assess quantitatively the specific impact of epistemological training on future research. Moreover, Pallas (2001) posited that epistemological diversity was often difficult to achieve in a doctoral training program because students were responsible to a small number of individuals. As such, doctoral students' epistemological foundations and therefore research designs were often mono-operational.

This current research attempted to analyze quantitatively the specific impacts of epistemological training. As mentioned previously, this project confirmed previously hypotheses that epistemological doctoral training significantly influenced the future research within this sample. Somewhat surprisingly, this effect was dramatic and consistent across four models, two quantitative and two qualitative. Further, those individuals that were trained equally between the two epistemologies were much more

likely to utilize qualitative designs than quantitative designs. Although this could reflect the nature of education research being more adaptive to case studies, this author believes that the findings reflect the difficulties to learn, understand, and disseminate quantitative methodology and the need for further quantitative training in doctoral programs.

It should be mentioned that these findings could suggest that epistemological doctoral training has too large an effect on future researchers' work. Indeed Henson, Hull, and Williams (2010) cautioned mentors of future education researchers to accept openly divergent epistemological foundations and allow their students to explore both quantitative and qualitative foundations. However, this current project suggests that epistemological training ensures continued work almost exclusively from the epistemological training one received. Shadish, Cook, and Campbell (2002) stated explicitly that research design should be a function of the research question. Most likely, this analysis revealed, researchers utilized designs that they were most familiar instead of the appropriate design for the research question.

The second analysis conducted by this author revealed a potential reason why quantitative researchers tended to utilize almost exclusively quantitative designs. A MANCOVA design was utilized to investigate the relationship between epistemological training, academic position, and published journal articles, book chapter, and conference presentations. This analysis revealed that a relationship existed between an individual's epistemological training and his or her amount of published journal articles. This should not come as a surprise as some authors posited that language within the No Child Left Behind Act would mandate funding to researchers that utilize scientifically based

research (Eisenhart & Towne, 2003; Eisenhart & DeHaan, 2005). If more funding opportunities are presented for quantitative research then it stands to reason that more would be conducted, and thus this research disseminated more often. Moreover, this may reflect the nature of “very high research activity” institutions more than the funding itself. A more detailed examination of other intuitions types is required.

It should also be mentioned that this conclusion was drawn exclusively from the post hoc tests of epistemological effects between mainly qualitative and mainly quantitative designs. A significant difference in published works was not found between the individuals that indicated they received equal training and those that received mainly quantitative. It is entirely possible that having an equally divided training provides ample opportunities for researchers to disseminate. However, this does not negate the fact that qualitatively trained researchers published fewer journal articles compared to quantitatively trained researchers. Therefore this author argues, like others previously, that a bias exists within published literature. Steps should be taken to ensure that impactful qualitative research be disseminated as well.

Finally, this author explored the relationship between academic position and productivity. Indeed this was not a new topic and others have long speculated on the productivity of the academic (Long, 1978; Long, Allison & McGinnis, 1979). However, this analysis added substantive new knowledge to the already established community of researchers that investigated productivity by specifically sampling education researchers. Indeed the results revealed analogous conclusions to that of Joy (2007) and Bland et. al (2006) by indicating that academic position had an effect on academic productivity. This

author concluded that tenured professors (AS, FP, and DP) produced far greater published works than non-tenured researchers even after controlling for a number of variables including length of time since doctoral degree matriculation.

Generalizability

Shadish, Cook, and Campbell (2001) discussed the generalizability of findings from nonexperimental design. This author believes that the findings pose significant generalizability for two reasons. First, the sampling technique utilized a nationally-representative sample and a stratified-random process. As explained previously, stratification was necessary because of the overpopulation of universities on the east coast. To ensure nationally-generalizable findings, this author stratified the sample into three regions and proportionally and randomly selected from the three regions.

Second, the nonexperimental design statistical techniques utilized lend appropriately to interpolation. Interpolation is the process of generalizing to a larger population within a sample of data previously collected. Because of the large number of participants, the results should be robust to statistical anomalies and the conclusions drawn applicable to other education researchers.

Of course, it is important to mention that these results are only applicable to the Carnegie Foundation's "very high research activity" universities' School of Education professors. Indeed Bland et. al (2006) found significant production differences in the types of universities' professors between Carnegie types. Although Bland et al. examined the field of higher education altogether, their results most likely apply to the current study. Therefore, it is entirely possible that the conclusions drawn from this

sample will differ from the conclusions drawn from other samples of differing university types.

Limitations

A number of limitations should be mentioned. First, as mentioned previously, this author sampled only professors from the Carnegie Foundation's "very high research activity" universities. Although this represented a large proportion of the education researchers, this sampling design clearly omitted other education researchers outside of very high research producing universities.

Moreover, the field of education research is not limited to merely School of Education professors. Indeed it is a diverse field where economists, philosophers, psychologists, primary and second school staff, and large research-specialized firms work together to improve education. However, unlike fields within the natural sciences, such as biology or physics, this diversity engenders difficulty to evaluate critically the literature education researchers create. Nevertheless, this author believes it is imperative to the field to continue to maintain high standards and continually evaluate itself in order to produce quality research.

Future Research

Future research should continue to evaluate critically the field. As such, this author believes a national association of education researchers, most likely the AERA, should conduct similar research. This will ensure that researchers attend to all types of research as well as to evaluate the education research landscape over time.

Further, education researchers outside of type one should also be surveyed. More than likely these researchers produce less overall research, but this survey would help to confirm the variable relationships discussed in this project. For example, it is possible that no relationship exists for academic position and production. Although tenured professors within type one Carnegie Foundation schools produce the most research, tenured professors within other typologies, especially within non-doctoral universities or two-year colleges, produce equivalent research.

Conclusions

This project ambitiously attempted to evaluate the field of education research. Indeed this is a difficult task and remains incomplete. Initially this author believed, somewhat naively, that an evaluation of education researchers could be constrained solely to School of Education professors. A brief observation of the education literature, however, returns research that derives from myriad sources, many outside Schools or Departments of Education.

Nevertheless, this evaluation provided an important observation of the community that produces a great deal of the literature on education and therefore some general, yet cautious, conclusions can be drawn. First, the fields of education researchers within Carnegie Foundation's "very high research activity" universities are from a new generation. Many received tenure within the last few years and have an education research background. This author believes that this will foster, as all new generations usually do, continued advancement.

Second, epistemological training provides even greater than expected influences on its trainees. Although previous literature hypothesized this relationship, this author believes that these analyses represent the first quantitative analysis and conclusions of its kind. Further, these analyses provide a unique observation of individuals of equal quantitative and qualitative training. One can conclude, again somewhat cautiously, that individuals who received equal training most likely will utilize qualitative methodology in their future research. Moreover, researchers too often rely on non-randomized experiments, but this conclusion is not the first of its kind.

Finally, as previously stated within this document and other researchers, education research is a burgeoning field and needs continued evaluation. This research should represent the first of these evaluations, and this author will continue to advocate for further surveys and analyses.

APPENDIX A:
EDUCATION RESEARCHER IDENTITY SURVEY (ERIS)

Education Researcher Identity Survey

1. Please indicate the university you are affiliated with:
2. Please select the school or college you are appointed (or have joint appointment) to:
 - A. School, College, or Department of Education
 - B. Other
3. Gender
 - A. Female
 - B. Male
4. Degree
 - A. PhD
 - B. EdD
 - C. Other doctoral degree
 - D. I do not have a doctoral degree
 - E. I do not have a doctoral degree but am working on it currently.
5. What major was your degree awarded within?
6. What year was your degree awarded?
7. What position do you hold at this university?
8. Do you hold tenure?
9. In what year were you first awarded tenure?
10. In what year did you start at this university?
11. What is your position status at this university?
 - A. Part-time
 - B. Full-time
12. Which department are you mainly appointed to?
13. While working at this university, you spend the majority of your time:
 - A. As a teacher
 - B. As a researcher
 - C. As an administrator
14. Your doctoral research training courses mainly consisted of:
 - A. Quantitative courses

- B. Qualitative courses
- C. Completely even 50/50 split

15. During a typical semester in the last five years at this university, on average how many courses did you teach per semester?

16. Throughout your career, your overarching epistemological foundations as a researcher can best be described as:

- A. Purely qualitative
- B. Partially mixed but mainly qualitative
- C. Equally mixed between qualitative and quantitative
- D. Partially mixed but mainly quantitative
- E. Purely quantitative

17. The overarching epistemological foundations of the majority of your colleagues in the School of Education at this university can best be described as:

- A. Qualitative
- B. Quantitative

18. In the last five year, the majority of your research can best be described as:

- A. Purely qualitative
- B. Partially mixed but mainly qualitative
- C. Equally mixed between qualitative and quantitative
- D. Partially mixed but mainly quantitative
- E. Purely quantitative

19. Please use the following scale to describe how much your published research had focused on the following areas in the past five years (last row may be used for other):

1. None of my research focused on this topic
2. Some of my research focused on this topic
3. About half of my research focused on this topic
4. The majority of my research focused on this topic
5. All of my research focused on this topic

- A. Policy
- B. Pedagogical practice/learning
- C. School reform
- D. Leadership
- E. History
- F. Sociology
- G. Methodology/ Statistics
- H. Clinically-focused Psychology
- I. School-focused Psychology
- J. Other

20. Please use the following scale to describe how much your published research utilized the research categories in the last five years (last row may be used for other):

1. None of my research focused on this topic
2. Some of my research focused on this topic
3. About half of my research focused on this topic
4. The majority of my research focused on this topic
5. All of my research focused on this topic

- A. Basic
- B. Applied
- C. Evaluation
- D. Action
- E. Orientation/Critical
- F. Other

21. Please use the following scale to describe your published quantitative research in the last five years (last row may be used for other):

1. None of my research focused on this topic
2. Some of my research focused on this topic
3. About half of my research focused on this topic
4. The majority of my research focused on this topic
5. All of my research focused on this topic

- A. Non-experimental
- B. Quasi-experimental
- C. Experimental
- D. Meta-analysis
- E. Other

22. Please use the following scale to describe your published qualitative research in the last five years (last row may be used for other):

1. None of my research focused on this topic
2. Some of my research focused on this topic
3. About half of my research focused on this topic
4. The majority of my research focused on this topic
5. All of my research focused on this topic

- A. Case study
- B. Phenomenological
- C. Ethnography
- D. Historical
- E. Grounded theory
- F. Other

23. Did you teach at an elementary or secondary facility prior to working at this (or any other) university?

- A. Yes

B. No

24. Do you agree with the standards of research practice established by the No Child Left Behind Act of 2001?

- A. Agree
- B. Neither agree nor disagree.
- C. Disagree
- D. I am not aware of the new standards.

25. What effect, if any, has the No Child Left Behind Act of 2001 had on your research practices?

- A. Very significant effect
- B. Some effect
- C. Little effect
- D. No effect

26. In the past five years, how many (total) peer-reviewed journal articles have you published?

27. Of those articles, please indicated how many have been about the following topics (please assure that the total adds to the amount listed previously):

- A. Empirical studies
- B. Essay/Book reviews/Opinions
- C. Literature reviews
- D. Theoretical discussions
- E. Other

28. In the past five years, how many published peer-reviewed journal articles have been education-specific?

29. Please use the following scale to indicate how many of your published peer-reviewed journal articles appeared in the following types of journal:

- 1. None of my research focused on this topic
- 2. Some of my research focused on this topic
- 3. About half of my research focused on this topic
- 4. The majority of my research focused on this topic
- 5. All of my research focused on this topic
- A. Education
- B. Psychology
- C. Economics
- D. Sociology
- E. Medical or natural sciences
- F. Social sciences not mentioned
- G. Other

30. In the last five years, how many books have you written?
31. In the last five years, how many of those books have been education specific?
32. In the past five years, how many of those book chapters have been education-specific?
33. In the past five years, how many times have you presented at a national conference?
34. In the past five years, how many of those conferences have been education-specific?

APPENDIX B:
EMAIL TEMPLATE

“It is difficult to evaluate arguments about the quality of education research as a whole because the field of education research is such a large and diverse enterprise. Little effort has yet been devoted to understanding the field itself...” Hedges & Hans-Martin (2009)

Dear (University Name) Faculty Member:

My name is Joshua Polanin; I am a graduate student within the School of Education at Loyola University Chicago. I hope this email finds you well.

The above quote represents a burgeoning issue within the field of education research. In fact, Hedges and Hans-Martin (2009) continued, “Empirical evidence about the field would certainly inform analysis of education research and its successes or failures” (p.105). With your help, the linked survey will attempt to garner this empirical information.

You have been selected because you work at a Carnegie Foundation “very high research activity” university. Many other School of Education professors at these institutions will be asked to participate in this survey as well. The survey contains general questions about your work and usually requires ten minutes to complete.

Please feel free to contact me by replying to this email if you have any questions or concerns. You may also contact Dr. Terri Pigott at tpigott@luc.edu with further comments or concerns.

(Individualized Opinion Link)

Thank you for your time on this project and efforts in the field.

Josh

Hedges, L., & Hans-Martin, J. (2009). Can non-randomized studies provide evidence of casual effects? A case study using regression discontinuity design. In P. B. Walters, A. Lareua & S. Ranis (Eds.), *Education research on trial* (1st Edition ed., pp. 105). New York, NY: Routledge.

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VITA

Joshua R. Polanin was born in Peoria, Illinois and raised in the Peoria suburb of Germantown Hills, Illinois. Prior to attending Loyola University Chicago, Joshua attended the University of Illinois at Urbana-Champaign where he graduated with a Bachelor of Science in Psychology in 2006.

While at Loyola, Joshua received a Graduate Assistantship Award and the Education Graduate Tuition Award and worked in the Research Methodology department. In addition, he has been a member of the Graduate Student Advisory Committee of Loyola since the fall of 2008 and the American Education Research Association Graduate Student liaison to Loyola since the spring of 2010.

Joshua will continue at Loyola University Chicago in the Research Methodology department and expects to graduate with his Ph.D. in May 2013.