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# Examining the Frequency and Implementation of Validation Techniques: A Content Analysis of EdD Dissertations in Educational Leadership

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## Abstract

This paper describes a content analysis used to examine educational doctoral degrees (EdD) dissertations in a U.S. university. The purpose of the study was to get a better understanding of the validation techniques utilized in dissertations published by EdD students. Forty-nine dissertations were selected and examined for research methodologies, research design, and elements of vigorous validation techniques. The most frequently found methodology was quantitative ( $n = 30$ ; 61.22%) followed by qualitative ( $n = 13$ ; 26.53%). Among the quantitative studies, the most frequently used design was survey ( $n = 18$ ; 60%). The most frequently used design in qualitative studies was case study ( $n = 6$ ; 12.14%). Validation techniques for quantitative designs were mostly content validity ( $n = 18$ ; 50.00%). Trustworthiness techniques for qualitative designs were mostly member checking ( $n = 8$ ; 19.51%). There were no legitimation techniques identified for mixed methods designs. Implications for this study in higher education include EdD doctoral students and committees use at least three techniques for validation purposes.

**Keywords:** credibility, doctoral students, rigor, quality, trustworthiness

## Introduction

Doctoral degrees serve as a crowning achievement for university students. However, in the field of education, the number of graduates achieving an EdD appears to be on a downward trend. According to the National Center for Science and Engineering Statistics (2021), between 2010 and 2020, among all doctoral degrees awarded, the proportion of EdD decreased from 5,287 (11.00%) to 4,716 (8.53%). These statistics suggest that schools of Education could be in trouble not only financially, but also with failing to produce future educational leaders. The diminishing number of doctoral graduates in educational leadership will create demands for their skills in the workforce. Whitchurch (2008) argues that these new graduates will be expected to negotiate within the intersection of the professional and academic domains. Here, EdD graduates will develop *Third Space* identities who negotiate between academic and professional roles (Whitchurch, 2008). For Whitchurch, roles for professional staff have grown into “outreach and study skills, access and equity, community and regional partnership” and for academic staff “pastoral support, curriculum development for non-traditional participants, and links with local providers” (p. 7). These roles

have converged and negotiated “around broadly based projects such as student transitions, community partnerships, and professional development” (p. 7). Although this negotiation suggests the worlds of the practitioner and the scholar each has its different rhythms, demands, and focus (Wasserman & Kram, 2009), it is well known that the context of the EdD degree continues to favor a practitioner stance; that a dissertation should enable students to acquire research skills and to generate knowledge; and that EdD graduates need to develop academic language, recognize the “disinterested nature of academic debate,” and should be able “to hold their own in such an arena” (Whitchurch, 2008, p. 386). Deering (1998) argued that because of many similarities it is difficult to distinguish between the EdD and PhD.

Some researchers such as Shulman et al. (2006) suggest that the attainment of the PhD implies more robust and rigorous preparation as a researcher for a tenure track career as faculty while the EdD serves as preparation for practitioners. Students who pursue the PhD will emphasize scholarship, and those who pursue the EdD focus on practice (Levine, 2005; Shulman et al., 2006). Other researchers suggest that the awarding of either degree serves as the culminating activity of a doctoral program and can also represent a candidate’s scholarly ability (Hanna, 2015).

Gillham et al. (2019) have indicated that graduates of EdD preparation programs need an understanding of the academic space, and they need rigorous preparation that necessitates learning how to identify problems of practice and embracing “the potential impact of their research on their local contexts to enhance the generation of knowledge” (Gillham et al., 2019, p. 2). EdD preparation programs need to ensure that their graduates engage in robust research projects grounded in scholarly tradition with an understanding of localized knowledge. Doctoral programs nurture the developmental scholarly activities of students and the interactions between each program’s faculty, and students develop expert-level understanding in their particular field (Gardner et al., 2007; Hanna, 2015).

Lochmiller and Lester (2017) adopted the term practitioner-scholarship to reconceptualize the relationship between these two roles in educational leadership program outcomes. Within their theorization, they positioned a paradigmatic stance for the role of the practitioner-scholar at an ontological, epistemological, theoretical, and methodological level. In contrast to Hochbein and Perry (2013), but in agreement with Whitchurch (2008), Lochmiller and Lester argued that the importance of training doctoral students in basic and applied approaches to research is to ensure that these students can engage in substantive conversations with other practitioners and researchers.

Schools of education, depending on the emphasis on scholarship, award either a PhD or the EdD after a successful defense of the dissertation. Some schools of education award both degrees, and others award only the EdD degree. For instance, Drexel University in Philadelphia and University of Pittsburgh offer programs in both. However, Western Kentucky University provides for only the EdD degree.

To identify and to distinguish the EdD from the PhD as well as to counter argue the elimination of the EdD (Levine, 2005) yet maintaining the rigor of doctoral scholarship, numerous scholars impressed the notion that these degrees should serve distinguishing ends by eliminating blurriness (Shulman et al., 2006), developing skill sets (Hoffman & Perry, 2016), and habituating to the use of research in real-world contexts (Hochbein & Perry, 2013). However, little to none of the

discussions pertaining to EdD dissertations addressed the advocacy for the use of validation techniques. In fact, Jarvis (1999) posited that practitioner-scholars need not concern themselves with validation, given the localized context.

There has been debate on the usefulness of validity advanced along more complex lines that include its usefulness as scientific, technical, or ethical (Kane, 2001; Newton & Shaw, 2014). However, faculty need to emphasize high levels of rigor, relevance, and value in methods training. Among the knowledge, skills, and dispositions for EdD graduates, in fact, for any doctoral level training, students should include the use of validation techniques. Should dissertation in practice advance within the academy, faculty cannot lose sight of validation. An extensive review of the extant literature revealed that a shortage of studies exists related to the examination of EdD dissertation validation techniques.

The purpose of this study was to investigate the prevalence of validation techniques used in EdD dissertations at a large university located in the southern region of the United States. The research team found little to no studies that investigated the use of validation techniques in EdD dissertations. This study adds to the extant literature relating to the use of validation techniques.

The researchers are associated with a doctoral program located in the institution where this study was conducted. The first author serves as a faculty member and teaches core courses in the program. While he has served on dissertation committees, none of those committees directed any of the dissertations in the present study. The second author is currently a doctoral candidate in the program. She has completed all required coursework in the program and passed qualifying exams.

The researchers crafted three research questions to guide the study. The inquiry centered on gaining a better understanding of the validation techniques selected and used by EdD students to support their dissertations.

- RQ 1: What research methodologies did EdD students use to support their research questions for their dissertation projects?
- RQ 2: Among the different methodologies selected, which research designs were used most frequently?
- RQ 3: What techniques did students implement to support validity in their dissertation project?

## Literature Review

This section begins with a brief discussion about the EdD and how it fits on the scholar-practitioner continuum. After validation is introduced, a general discussion of some techniques from three methodological paradigms follows. These paradigms are distinguished in their nomenclature of validation approaches. The use of *validity* is understood in quantitative methods, *trustworthiness* with qualitative methods, and *legitimation* with mixed methods research.

EdD should not be seen as an offshoot of the PhD (Wergin, 2011). The EdD program facilitates the growth of knowledge, skills, and addresses real-world issues and leadership challenges (Holley & Harris, 2019). Practitioners choose EdD programs to achieve professional goals such as becoming more effective school leaders by combining practice and scholarship within their individual contexts—they learn to become scholarly practitioners by blending practical wisdom

and professional knowledge to influence policy and change (Buss et al., 2017). Students in professional doctoral programs bring a wide range of expertise to their programs. Whitechurch (2008) found that these professionals typically go into careers in higher education spaces.

Researchers continue to highlight the historical context (Buttram & Doolittle, 2015; Wergin, 2011), usefulness (Thomson, 2018), and the evolving nature of the EdD (Perry, 2012). Within the literature there are even discussions on the knowledge, skills, and dispositions needed for EdD recipients (Bowers, 2017; Buss, 2018; Gillham et al., 2019; Zambo, 2011). Expert-level understanding for doctoral students include knowledge, skills, and dispositions. These coalesce to create the scholar-practitioner.

From their research, Wasserman and Kram (2009) suggest that the term scholar-practitioner can be described as a cycle of producing and consuming knowledge in service of continuously improving practice and effectiveness. Carton and Ungureanu (2018) suggested that scholar-practitioners see themselves as crafting a unique hybrid profession located in-between “filled with tensions” (p. 443). Whitechurch (2008) found that scholar-practitioners may be broadly categorized by their professional identities as bounded, cross-boundary, or unbounded. Bounded professionals work within the boundaries of the job description. Cross-boundary and unbounded professionals extend their roles “beyond their given job descriptions” (Whitechurch, 2008, p. 6). In building a model for human resources scholar-practitioners, Kormanik et al. (2009) found that practitioners privilege skills such as comfort about top management, organizing, and perseverance, while scholars uniquely identified process management, managing and measuring, personal learning, innovative management, and self-knowledge.

Although scholars (e.g., those who pursue a PhD) and practitioners (e.g., those who study for the EdD) agree on competencies, each group seems to reflect and give preference informed by their lived experience. A grounded theory study using a sample of twenty final year PhD students found that broad areas of skills development (i.e., personal resourcefulness, cognition, research skills, workplace and career management, leadership and organization, written and oral communication, and project management) support the notions that the PhD affords the “acquisition of an interrelated suite of intellectual virtues” and not just a push for skills (Mowbray & Halse, 2010, p. 662). PhD students and faculty in Education identified habits of mind—quest for knowledge, independence, and humility—along with skills and abilities such as the ability to analyze, synthesize, evaluate and conduct research in a variety of traditions, and the ability to communicate contribute to research as the dispositions needed to be successful (Gardner et al., 2007). Despite perceived preferences, Benge et al. (2012) argued that doctoral students should instill good reporting practices, and Agunloye (2019) posited that all academic scholarship should be grounded in high ethical standards.

Scholarly-practitioner graduates from (re)designing EdD programs were found to be exhibiting behaviors that included using theories to guide their work and disseminating outcomes (Buss, 2019). In these studies, the researchers did not investigate the extent of validity techniques used in the practitioners’ context. Based on the accountability climate in which scholar-practitioners may work, the link between self-efficacy and research interest among EdD need to be understood--study found that with each research course completed, self-efficacy increased, but no significant positive relationship between students’ interest in research and research self-efficacy (Kerrigan & Hayes, 2016).

Buss and Avery (2017) studied the development of educational leaders and researchers associated with the Carnegie Project on the Education Doctorate. Their quantitative and qualitative data suggested not only the improvement of leadership skills, but also indicated significant growth in research skills. Qualitative data indicated that the EdD students applied their leadership and research skills in professional workplaces. Gillham et al. (2019) conducted an analysis on a sample of education doctorate dissertations ( $N = 19$ ) and revealed the dissertations contained broader research questions that were based on their professional roles at the workplace.

Richards et al. (2018) found in their content analysis of counselor dissertations that quantitative methodology was most frequently used; however, they did not analyze validation techniques. Anderson (1983) noted that the most used research method was quantitative followed by qualitative. Mixed research method was the least commonly used in research studies. He further noted that the differences in research methods chosen in both EdD and PhD dissertations were not significant. The most used statistical techniques in the studies were descriptive statistics, followed by bivariate correlation, ANOVA, and t-test. Multiple regression was the most common intermediate level statistic method used. Anderson (1983) found that PhD students applied more advanced statistical methods in their dissertations than EdD students; EdD students' dissertations were more likely to use basic statistics in their dissertations. Together Anderson (1983), Gringeri et al. (2013) examined methodological rigor in 75 qualitative social work dissertations between 2008 and 2010 and their findings indicated that many students used several strategies to ensure the rigor of their dissertations. External audit was most frequent, followed by member checking, data triangulation, and thick description.

### ***Validity***

Validity derives from the Latin word, *validus*, meaning “strong, powerful” (latin-dictionary.net, n.d., para. 1). English usage refers to validity as the soundness of an assertion or a logically well-grounded claim (Sireci, 1998). Validity claims and usage vary across disciplines, such as: establishing truthfulness of witnesses in law (Oberlader et al., 2016; Raskin & Kircher, 2014) and examining data collected from controlled and field experiments in economics (Roe & Just, 2009).

Theorists and researchers continue to argue the exact nature of validity. Newton and Shaw (2014) posited that validity theory provides a framework for validation practice and that the purpose of validation provides evidence and analysis in support of an argument concluding in a valid claim. In deductive reasoning false premises can include valid arguments. For example, a valid but not sound argument would include starting with the false premise that all dogs are immortal, then stating that a particular pet is a dog, and concluding that the pet is immortal.

Campbell (1957) introduced the notions of internal and external validity. Campbell posited that internal validity is the degree of confidence in the conclusion that a genuine effect occurred for the experimental group while ruling out alternative explanations. Campbell argued that confidence could be placed in the generalizability of the genuine effect from the sample to the population. Upon further developments, Cook and Campbell divided internal validity into two: internal validity and statistical conclusion validity. External validity was divided into construct validity and external validity (Newton & Shaw, 2014).

In their extension of external validity, Bracht and Glass (1968) identified two classes of threats which they coined as population validity and ecological validity. In brief, population validity concerns the notions of differences between the target population versus those whom the experimenter accessed. Questions raised here include whether the changes in some level of one variable would make a difference in the treatment effect. Ecological validity includes, among others, notions of “describing the independent variable explicitly” (p. 438), the Hawthorne Effect, and pretest sensitization. Ecological validity concerns generalizations across settings, experimenter behavior, treatments, and variables. Additionally, ecological validity subdivided into outcome validity (generalization across dependent variables), temporal validity (generalization over time), and treatment variation (generalization across treatment variation; Newton & Shaw, 2014).

Although Messick (1980) posited only construct validity, other kinds continue to emerge such as convergent validity and discriminant validity (Johnson & Christensen, 2017). The American Psychological Association and the American Educational Research Association issued statements relating to validity. These narrow to content, construct, and criterion validity (Newton & Shaw, 2014).

Content validity refers to credibility of the assessment instrument as it relates to measuring the targeted construct (Sireci, 1998). Construct validity relates to how a higher-order construct is operationalized and its theoretical understanding (Johnson & Christensen, 2017). Criterion validity is the comparison of the construct when compared to well-established outcomes (Sheperis et al., 2017).

### ***Trustworthiness***

Validation techniques for qualitative research address similar concerns relating to truth and found in quantitative research. Qualitative researchers need to collect, analyze, and present credible data. Using naturalist methods, researchers need to ensure internal and external validity (Guba, 1981). In qualitative projects, the nomenclature relating to the notions of validity changes as a way of distinguishing techniques used in quantitative methodology (Guba; 1981; Krefting, 1991). Guba (1981) introduced trustworthiness as the term to encompass validity for qualitative methodology. For Guba, trustworthiness parses validation approaches as internal validity (credibility) and external validity (transferability). Also, reliability is called dependability, and objectivity is confirmability. However, Morse (2015) suggested a return to rigor (instead of trustworthiness), and replacing dependability with reliability, credibility with validity, and transferability with generalizability. In addition, he argues that rigor includes strategies, such as prolonged engagement, persistent observation, thick description, and inter-rater reliability, as well as negative case analysis, peer review, member checking, external audits, and subjectivity statements.

Krefting (1991) suggested that responsibility lies with researchers who engage in qualitative analysis to access subjective meanings and perceptions. For Krefting, trustworthiness includes four strategies: (a) credibility, (b) transferability, (c) dependability, and (d) confirmability. Stake (1995) noted that qualitative researchers triangulate evidence that should be valid, relevant, and build user confidence. For Stake, triangulation adds to build credibility.

Creswell and Miller (2000) advanced a two-dimensional framework for qualitative researchers based on the researchers' paradigmatic stances and lens of either the researcher, participants, or reviewers. In their framework, they identified nine validity approaches: (1) audit trail, (2) collaboration, (3) disconfirming evidence, (4) member checking, (5) peer debriefing, (6) prolonged engagement in the field, (7) researcher reflexivity, (8) thick description, and (9) triangulation. Although implied, Creswell and Miller did not delineate these procedures as internal or external validation techniques.

Holley and Harris (2019) stated that internal validity adds to the strength of qualitative research. Internal validation techniques for qualitative studies include triangulation, member checks, reflexivity, data saturation, and peer review. Triangulation relates to researcher's cross-check collected data through multiple data sources and verified by the usefulness and representation of collected data. This technique includes comparing information across various sources which leads to an increased researcher's confidence in their data collection process. Holley and Harris stated that triangulation is an important element of vigor technique in an insightful dissertation. These authors believed that researchers could learn from multiple data sources and suggested the incorporation of multiple data sources into a data collection plan. Additionally, practicing triangulation not only takes minimal extensive efforts for doctoral students but also eases the stress of the research in general (Holley & Harris, 2019, p. 168).

Member checking is another validation technique used to strengthen qualitative methods. Member checking refers to inviting participants to provide feedback on codes, categories, and conclusions of collected data. Examples of this technique include having participants review the transcript, providing any clarification and correction, and sharing findings or conclusions with participants to determine whether the analysis matches participants' experiences. Reflexivity relates to researchers including their "individual biases, experiences, ideological stances, and assumptions related to the research topic" (Holley & Harris, 2019, p. 169). Reflexivity is a technique that affords the qualitative researcher's project internal validity. Data saturation, another internal validation technique, refers to a state where a researcher can no longer gain additional information codes or categories from data analysis. As researchers perceive the same ideas from different participants, it is indicative of data saturation (Grbich, 2012). Reaching data saturation neither positively correlates to the rigor of research design (Holley & Harris, 2019), nor evidence of reaching a significant level of synthesis (Richards, 2014).

Peer review refers to seeking trusted professional peers in the field to improve the study and may also be used to validate a researcher's data. By adopting a peer review approach, the researcher indicates if a conclusion of the study is reasonable or inconsistent with norms in the field (Holley & Harris, 2019). Thick description emerged from the tradition of ethnography. While many perpetuate the notion that Clifford Gertz introduced thick description, Ponterotto (2006) noted that Gertz credits British metaphysical philosopher Gilbert Ryle. Thick description is a technique to strengthen the external validity of interpretive research. Holley and Harris, (2019) describe thick description as providing sufficient contexts such as detailed description of findings with supporting evidence such as field notes, interview quotes, and documents (Merriam, 2009), which can help readers to determine the contexts of the study and contexts of findings. External validation for dissertations should include thick description and maximum variation (Holley & Harris, 2019). Thick description appears in chapter four of a dissertation, which mostly provides additional details of findings (Holley & Harris, 2019).



Maximum variation refers to selecting a wide range of data collection. For instance, a purposeful collection of heterogeneous samples can be investigated in different settings and results can be applied to broader settings. However, certain research questions may not be suitable for variation in sampling, so it is suggested to apply other techniques to increase validity (Holley & Harris, 2019). Validity and trustworthiness, as nomenclature, only apply to quantitative and qualitative methodologies, respectively. In mixed methods research, the nomenclature refers to legitimation.

### ***Legitimation***

Onwuegbuzie and Johnson (2006), recognizing the utilization of the strengths of combining quantitative and qualitative research, suggested the use of nine types of legitimations as nomenclature for validity in mixed methods research. Legitimation includes sample integration (statistical generalizations to the target population); inside-outside (accuracy of insider's and observer's view); weakness minimization (strengths of one approach offsets weakness of the other); sequential (effects on meta-inferences by reversing the phrases); conversion (quantitizing and qualitzing provides meta-inferences); paradigmatic mixing (researcher's paradigmatic stances blend); multiple validities (use of multiple validity types across paradigms); and political (how users value meta-inference from mixed research). Legitimation should not be seen as a procedure, but better used as a continuous iterative, interactive, and dynamic process (Onwuegbuzie et al., 2011). In addition, researchers should have a clear philosophical stance. According to Collins et al. "Lack of philosophical clarity at any stage of the mixed research process has the potential to affect adversely legitimation/quality" (2012, p. 857).

Harrison et al. (2020) posited a Rigorous Mixed Methods framework to apply for mixed methods studies. They proposed four primary elements and two advanced elements. For each of the qualitative and quantitative strands, the four primary elements include rigorous data collection; the second element describes rigorous data analysis; the third element describes the *integration* or mixing of both data strands; and the fourth primary element describes the use of a specific mixed methods design type: exploratory sequential, explanatory sequential, and convergent designs.

Harrison et al. (2020) argued that reports should include two advanced elements: presenting the aims and purposes of mixed methods research; providing a clear rationale for a mixed methods study, including a mixed methods research question; discussing the value of mixed methods research and referencing mixed methods literature. The second advanced element includes the use of joint displays to show integration, and using the term, mixed methods, in the title.

Hong and Pluye (2018) supported Harrison et al. (2020). They posed a critical appraisal which identified strengths and weaknesses of mixed methods research to determine confidence in the findings of a study. Among their framework components, the first concerns two dimensions—methodological (trustworthiness) and conceptual (insightfulness). A validation framework, VF, for mixed methods studies has been proposed (Leech et al., 2010). However, Fàbregues et al., (2018) found among studies in education, nursing, psychology, and sociology approaches to validation in mixed methods studies were not consistent.

## Methods

The researchers conducted a content analysis exploring the use of validation techniques in EdD dissertations. Friel (2019) also used content analysis to examine dissertations. In this study, the researchers used the deductive content analysis design (Bengtsson, 2016). Content analysis, as defined by Krippendorff (2004), is “a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use” (p. 18). Content analysis, as a method of data analysis, affords researchers the ability to seek understanding of text by reducing the quantity of text collected, identifying categories, and grouping the text into the defined categories (Bengtsson, 2016). In addition, content analysis “provides a systematic and objective means to make valid inferences from verbal, visual, or written data in order to describe and quantify specific phenomena” (Downe-Wamboldt, 1992, p. 314).

## Sample

The units of analysis comprised a stratified random sample of EdD dissertations ( $n = 49$ ). These units of analysis represented dissertations from four strata corresponding to the areas of program concentration. The proportional sample represents concentrations in Organizational Leadership ( $n = 13$ ; 26.53%), P12 research ( $n = 12$ ; 24.49%), post-secondary research ( $n = 20$ ; 40.82%), and Teacher Leadership ( $n = 4$ ; 8.16%). The sample was taken from digitally stored dissertations housed at a major university located in the southern region of the United States. Dissertation committee members varied across all units of analysis.

## Data Collection

All EdD dissertations were published between 2011 and 2019. The researchers used an Excel spreadsheet to create a database. For each dissertation, the two researchers independently read the Table of Contents, Abstract, and Methodology for context clues that the author may have used to mention any validation techniques. After the context clues were identified and carefully examined, a code used for mining was assigned that corresponded to those on a list. If the validation technique was not explicitly stated, each researcher read the dissertation to detect where any mention or actions described by the author suggested a validation technique as stated on the coding sheet. For integration, after all the codes were entered into the spreadsheet, the researchers looked for agreements and disagreements. As the researchers read, any clarification was added to the code book.

The researchers used a manifest analysis, which describes the actual information from the unit of analysis and stays close to the text by using the words themselves and describing “the visible and obvious in the text” (Bengtsson, 2016, p. 10). In the contextualization stage, the research team created a coding list (see Table 1). They discussed both sets of coding to ensure mutual agreement, and any disagreements were reconciled. A Kappa analysis was performed to test for inter-rater reliability and found to be moderate ( $\kappa = .42$ ). The Kappa coefficient is a statistical measure of inter-rater reliability between two raters to determine agreement when assessing qualitative documents (Landis & Koch, 1977).

**Table 1.** Partial List of Coding Scheme

Methods	Design	Validation Technique
<b>Quantitative</b>	Correlation	Content validity
	Descriptive	Criterion validity
	Experimental	Construct validity
	Survey	Convergent validity
		Discriminant validity
		Population validity
<b>Qualitative</b>	Case study	Audit Trail
	Ethnography	Triangulation
	Grounded Theory	Self-reflection
	Narrative	Thick description
	Phenomenology	Member checking
	Grounded Theory	Peer review or debriefing
	Discourse Analysis	Negative or deviant case analysis
<b>Mixed Methods</b>		Maximum variation Prolonged engagement
	Explanatory	Inside-outside
	Exploratory	Sample integration
	Parallel	Multiple validities
<b>Embedded</b>		
<b>Program Evaluation</b>	Mixed Methods	Any validation technique from quantitative, qualitative, and mixed methods
<b>Action Research</b>	Collaborative	Any validation technique from quantitative, qualitative, and mixed methods
	Individual	
	School site	
	District wide	

### **Data Source**

The researchers sought and were granted IRB approval. They accessed full-text copies of dissertations that are digitally stored in the library's publicly accessible database. Each dissertation followed the program template which was developed by full-time faculty of the program and maintained the American Psychological Association formatted style. Dissertations ranged from 86 to 356 pages ( $M = 152.98$ ,  $SD = 55.62$ ). For the studies included in the present study, the authors, their professional roles, and dissertation methodologies reflected a diversity of concerns.

### **Findings**

#### ***What Research Methodologies Do EdD Students Use to Support Their Research Questions for Their Dissertation Projects?***

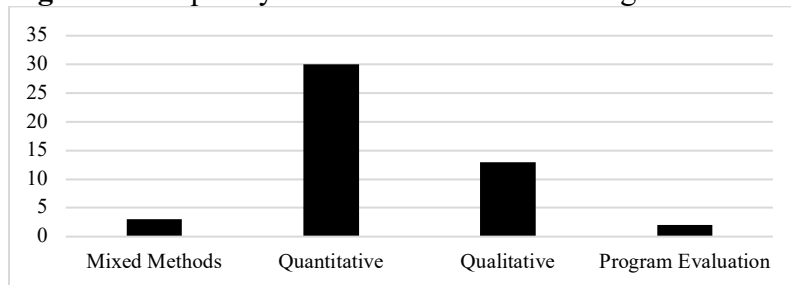
Most dissertations were completed using quantitative methodologies ( $n = 30$ ; 61.22%) followed by qualitative ( $n = 13$ ; 26.53%). Three were mixed methods research. Of the sample, two candidates completed dissertations using program evaluation. One of these was a quasi-experimental, and the other was a mixed methods design (see Figure 1). In the sample, none of the dissertations was designed with action research.

#### ***Among the Different Methodologies Selected, Which Research Designs Are Most Frequently Used?***

The most frequently quantitative design for these approaches was survey design ( $n = 18$ ; 60.00%). For qualitative approaches, the most frequently used design was case study ( $n = 6$ ; 12.24%).

Among the mixed methods designs ( $n = 4$ ); three were explanatory, and one mixed methods design was implemented in program evaluation.

**Figure 1.** Frequency Distribution of Methodologies

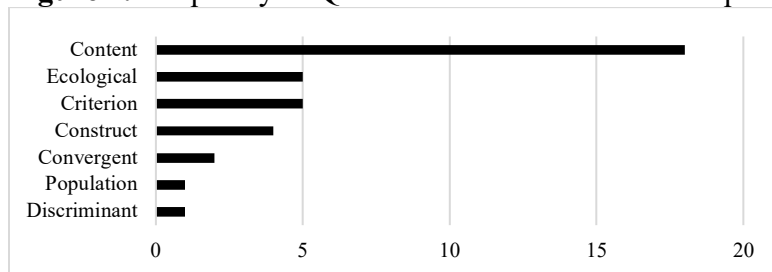


Note. Total number of dissertations = 49.

### *What Techniques Did Students Implement to Support Validity in Their Dissertation Project?*

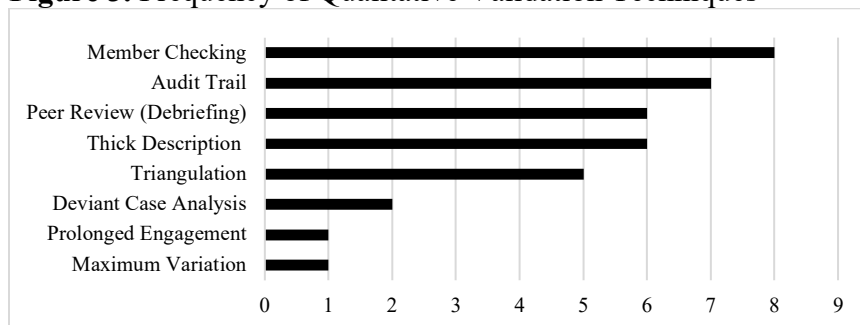
Figure 2 and Figure 3 display the frequencies of validation techniques found among dissertations completed with quantitative and qualitative methods. Quantitative techniques included content validity ( $n = 18$ ; 50.00%), ecological validity tied with criterion validity ( $n = 5$ ; 13.89%), and construct validity ( $n = 4$ ; 11.11%). Other quantitative validation techniques included convergent ( $n = 2$ ; 5.56%). Discriminant and population validity ( $n = 1$ ; 2.78%) were the least selected. Most frequent uses of trustworthiness were member checking ( $n = 8$ ; 19.51%), audit trail ( $n = 7$ ; 17.07%), and thick description tied with peer review ( $n = 6$ ; 14.63%). Other validation techniques included triangulation ( $n = 5$ ; 12.20%), negative or deviant case analysis ( $n = 2$ ; 4.88%). Students least used maximum variation along with prolonged engagement ( $n = 1$ ; 2.44%).

**Figure 2.** Frequency of Quantitative Validation Techniques



Note. Dissertations using quantitative designs = 30.

**Figure 3.** Frequency of Qualitative Validation Techniques



Note. Dissertations using qualitative designs = 13.

The researchers did not identify specific legitimization techniques in any of the dissertations that were identified as a mixed methods study. However, students used validation techniques that could be considered as a validation technique for the quantitative paradigm or within the qualitative paradigm.

## **Conclusions**

Content analysis was undertaken to determine the use of validation techniques that EdD doctoral students used for their dissertations. The analysis was based on predetermined codes. The researchers used the literature on research rigor to identify frequently and expected validation techniques found in research methodologies. The researchers posed three research questions:

- What research methodologies did EdD students use to support their research questions for their dissertation projects?
- Among the different methodologies selected, which research designs were most frequently used?
- What techniques did students implement to support validity in their dissertation project?

The scope of research was limited to a sample of EdD dissertations from one university.

The objective was to get a better understanding of the validation techniques used by EdD doctoral students. The researchers inspected dissertations that were published between 2011 and 2019 in one EdD program. A stratified random sampling technique was used because this approach afforded the inclusion of a representative sample of dissertations from different strands in the program. Only three of the dissertations were mixed methods, two were program evaluation, and none was action research. Thirty of the dissertations were completed using quantitative methodologies, and thirteen were qualitative methodology. The researchers found that the only validation techniques were quantitative and qualitative approaches.

## ***Quantitative Approaches***

The general picture emerging from the data was that many of the dissertations were grounded in the quantitative paradigm. The findings were compared to results of earlier studies that found the most used research method to be quantitative research method, followed by qualitative research methods (Anderson, 1983; Richards et al., 2018). The findings indicated that many of the students in the EdD program selected quantitative research methodology. A close inspection of the curriculum found that only one required course beyond the introductory research methodology course was quantitative methodology with a strong emphasis on survey design. The findings revealed that content validation was the predominant technique used in quantitative studies. Given the proportion of quantitative designs, this finding may not have been unanticipated because concerns may have been focusing on the construct that the instrument purports to measure. Among the least used techniques in the quantitative methodology was population validity, which addresses the findings as it relates from the sample to the population of interest.

## ***Qualitative Approaches***

A qualitative methodology course existed; however, it was an elective. Due to this, some students designed their studies using a qualitative methodology; however, it may be possible that they did not take a course in qualitative analysis. It is unclear if this was the case, as within the scope of

this research, transcripts were not cross-referenced to determine if an association between coursework and the background knowledge that the student would possibly lean on to use in the design of the dissertation existed. Gringeri et al. (2013) found that the most frequently chosen among qualitative methodology was grounded theory and phenomenology followed by case studies, ethnography, and narrative inquiry. In the present study, candidates most frequently used case study. Surprisingly, only two of the dissertations in the sample were designed using program evaluation. While program evaluation was a required class that all students took during their final year, the use of that methodology may have been too risky for students because program evaluations may be initiated by and involve a variety of stakeholders (e.g., program administrators, funders, and external agencies). Additionally, students may have been cautious due to time constraints. The least used validation techniques in qualitative approaches included prolonged engagement, persistent observation, and maximum variation. Because using these techniques often requires more resources, which students typically do not have, students may have avoided them. There were no validation techniques from the codes that were identified applicable to mixed methodology. Students who engaged in mixed methods research used techniques from the quantitative and the qualitative paradigms. Specific mixed methods validation techniques have been addressed and described in the literature (Onwuegbuzie & Johnson, 2006). However, in the present study, the researchers did not identify any legitimation techniques within the sample of dissertations.

### ***Theoretical Implications***

In the higher education space, theory serves in the underpinnings of the soundness of assertions or logically well-grounded claims (Sireci, 1998). Validation is among the steps taken to ensure soundness of claims. Validity claims and usage vary across disciplines, and for EdD candidates, considered more practitioners than scholars, these claims need to ground their projects. Validity theory provides a framework, and the purpose of validation provides evidence and analysis in support of an argument concluding in a valid claim (Newton & Shaw, 2014). As such, it is recommended that EdD students and their dissertation committee members use rigorous approaches.

### ***Practical Implications***

The implications that emerged from the present study were mainly practical and useful for students, teachers, and program designers. Practitioner-scholars are expected to operate in the workforce with *Third Space* identities. EdD graduates need to develop academic language (Whitchurch, 2008) and engage in robust research projects grounded in scholarly tradition. Doctoral programs should nurture developmental scholarly activities of students and interactions among program faculty and students help to develop expert-level understanding (Gardner et al., 2007; Hanna, 2015). Not only do EdD programs need to ensure that graduates leave with research skills and dispositions, but also foundational knowledge of validation techniques. The trend of providing educational leadership doctoral programs online has become vibrant. Hanna (2015) expressed concerns about the quality of education leadership doctoral dissertations that were culminated and produced from online programs without traditional instruction. EdD program planners should ensure that students and faculty encourage the use of validation techniques. This is an approach that will foster knowledge and develop dispositions as scholar-practitioners.

### **Limitations and Future Research**

A few limitations existed in this study. The used codes may not have been exhaustive, some validation techniques may have been misidentified. In addition, the dataset of EdD dissertations was limited to a small sample of those lodged in the graduate school of a university located in the southern region of the United States. Therefore, findings may be limited and not generalizable to all EdD dissertations. In addition, students may only have been exposed to a limited amount of research designs and may have had dissertation committee members who preferred particular validation techniques. Not all EdD dissertations used the methodological, designs, and validation techniques that were identified. Notwithstanding, EdD doctoral students demonstrated that they engaged not only in scholarly activity but also in practice and engaging in rigor was an expectation (Gardner, 2009; Zambo et al., 2015). Another limitation was the selection of dissertations. A stratified sample which included random selection within each identified stratum was used; however, this sample may not be a representative sample.

Due to the items previously mentioned the research may be biased; therefore, additional research is suggested. It is recommended that researchers examine the quality of EdD dissertations produced from online education doctoral programs and how students implemented validation techniques in those dissertations. Additional research to examine EdD dissertations produced with dissertations in practice and EdD student concerns addressed in dissertations which force students to rely on designs that they may not have the coursework and knowledge relating to the requisite and rigorous validation techniques would add to the body of knowledge.

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