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Research Application Paper

Richard S. Baskas

Walden University

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### Abstract

The purpose of this study is to compare and contrast two types of scholarly article designs, quantitative and qualitative, as to how two research designs can be similar and different, and how the authors' conduct their research and present their results. When researching and analyzing two scholarly articles of different design types, it is imperative to understand how vocabulary describes research, how research can produce varying data, how their results can be analyzed differently. References included two scholarly articles, one qualitative and one quantitative, and six secondary sources. A review of the two articles using research appropriate vocabulary would provide a more in-depth explanation of the research designs. Analysis revealed that even though both articles shared the same research design, various analytical techniques can produce different perspectives of the results.

### Research Application Paper

After a researcher has chosen a topic of interest to investigate, the topic will usually dictate what type of design to conduct research. Depending on the research questions or hypothesis, research will choose between two designs, quantitative and qualitative. Each design comprises many of the same components in the beginning, but differs in how they collect and analyze data, and present results. This paper will examine how two research designs differ in their design type and how the authors of two articles, Anderson, Murray, and Olivarez (2009) and Hill (2002), use these designs in their study to produce different results and analysis, and how research will provide for social change in how services will improve for homeless teens (Hill, 2002) and colleges will prepare managers as community college Chief Academic Officers (Anderson et al., 2002).

#### **Quantitative Research Techniques and Designs**

When examining interrelationships among variables, where researchers test objective theories, the most common design method to use would be a quantitative design. Researchers measure these variables using preestablished or custom made instruments, with closed-ended questions, so to analyze numbered data using statistical procedures (Creswell, 2009; Trochim & Donnelly, 2008). According to Gall, Gall, and Borg (2003, as cited in Wiersma & Jurs, 2009, p. 118), quantitative research has its roots in positivist philosophy, “the epistemological doctrine that physical and social reality is independent of those who observe it, and that observations of this reality, if unbiased, constitute scientific knowledge” (p. 632). Anderson et al. (2002) analyzed what quantitative characteristics may exist in their study as well as to help the reader to understand the authors’, Anderson et al. (2002), explanation of the similarities and differences when using quantitative research.

## Quantitative Methods

**Research questions or hypotheses.** Anderson et al. (2002) began their study with a list of research questions where a “systematic collection of data and clearly meet ethical guidelines” (Lodico, Spaulding, & Voegtle, 2010, p. 27) could answer these questions to guide the research. Anderson et al. (2002) listed their research questions in their study (a) What managerial roles do community college Chief Academic Officers (CAOs) perform, (b) which roles do they emphasize, and (c) are there differences in their roles due to environmental characteristics (span of control, collective bargaining, and region), personal characteristics (gender and age), or situational characteristics (years of managerial experience, years in position, and years at institution)? Following their research questions, Anderson et al. (2002) further defined their research with definitions.

**Definitions.** Anderson et al. (2002) listed only a few definitions in their study. Murray, Murray, and Summar (2000) defined a Chief Academic Officer (CAO) as an “administrative head of academic programs with responsibility for all academic affairs at the institution” (as cited in Anderson et al., 2002, p. 1). Anderson et al. (2002) defined a manager as a “leader of a particular organizational unit” (p. 3). As Anderson et al. (2002) were able to establish research questions and definitions, Anderson et al. (2002) were able to develop an instrument.

**Measurement and instrumentation.** Anderson et al. (2002) used a very minute measurement scale for their instrumentation. For their instrumentation, they used a managerial role survey, developed by Mintzberg (1973, as cited in Anderson et al., 2002) which was designed by Judson (1981, as cited in Anderson et al., 2002). Within the instrument, Anderson et al. (2002) developed their measurements of a four-part scale, (3) *not used at all*, (6) *a little*, (9)

*some*, and (12) *often* (p. 6). Having established a well measured instrument, the validity and reliability process can begin.

**Validity and reliability processes.** The instrument was modified to redefine its purpose for the study. The managerial role survey, developed by Mintzberg (1973, as cited in Anderson et al., 2002) was redefined further by Mech (1997, as cited in Anderson et al., 2002) and later again by researchers for this study. Anderson et al. (2002) added ten more questions due to latent factors having fewer than three indicator variables. Ten high education managers further critiqued the survey for content validity of managerial roles (latent factors). These managers identified which combination of three questions corresponded to each of the ten managerial roles, but none of the educators agreed. Revisions were made in the wording for three questions. Analysis was furthered for internal consistencies. Validity of the study included an exploratory factor analysis that all 30 questions loaded onto nine independent factors. Anderson et al. (2002) did not state the survey's reliability. Now that the instrument has been validated, sampling procedures can begin.

**Sampling procedures.** Anderson et al. (2002) used a stratified random sample where a "sample was selected that was more representative of their population" (Lodico et al., 2010, p. 145) being studied by six national accrediting regions, then calculating percentages of community colleges in each region. An appropriate number of colleges from each accreditation region were randomly selected. For statistical analysis purposes, oversampling was necessary. Surveys that contained instructions and a self-addressed, stamped envelope were mailed to randomly selected CAOs. Two weeks later nonrespondents received a second mailing. The final population that was used was 180 respondents. With a sampling determined, research can begin.

## **Quantitative Design**

When deciding to use a quantitative research design, a rationale should follow to explain the purpose of the design. The research an author intends to conduct will often dictate the type of design method (in this case, quantitative) that will be used to produce results. Anderson et al., (2002) study lacked terminology that would have described their design method and also lacked an explanation of the study. They however provided numerous research questions but no hypotheses. A specific design terminology was also lacking, but further analysis suggested an experimental design, “a hypothesis that is tested to establish a cause-and-effect relationship” (Lodico et al., 2010, p. 12). Along with an experimental design, two statistical methods were used for analysis.

## **Quantitative Analysis**

**Descriptive statistics.** Anderson et al. (2002) study used descriptive statistics to “summarize data from preestablished and quantitative self-developed instruments using graphical or mathematical procedures” (Lodico et al., 2010, p. 74). This approach analyzed their data by using numerous tables that included number of responses, means, and standard deviations. These tables listed different types of data to display relationships between (a) managerial roles and influencing variables, (b) how managers perform managerial roles in the United States, and (c) span of control by regions (North Central, Middle States, New England, Northwest, Southern, and Western) that contained percentages of gender, age, years of managerial experience, years at current institution, and years at their current position.

**Causal-comparative statistics.** Anderson et al. (2002) found significant relationships with their independent variables, environment, personal, and situational. Their dependent variables included 10 managerial roles. Multivariate analysis of variance (MANOVA) proved

significant differences between the independent and dependent variables where univariate tests confirmed the findings. Analysis of variance (ANOVA) proved differences in roles that were related to gender. Having examined the characteristics of quantitative research, qualitative research is also comprised of its own characteristic profile.

### **Qualitative Research Techniques and Designs**

When a study involves a personal relationship with its participants that would extend over a period of time for the purposes of observing and gathering data, this type of study would be considered qualitative, another design method. Qualitative designs show diverse perspectives, (a) social justice thinking (Denzin & Lincoln, 2005, as cited in Creswell, 2009), (b) ideological perspectives (Lather, 1991, as cited in Creswell, 2009), (c) philosophical stances (Schwandt, 2000, as cited in Creswell, 2009), and (d) systematic procedural guidelines (Corbin & Strauss, 2007; Creswell, 2007, as cited in Creswell, 2009). Inductive methods of reasoning and data analysis help to build patterns, categories, and themes from the bottom up by organizing data into increasingly more abstract units of information (Lodico et al., 2010; Wiersma & Jurs, 2009).

Qualitative research has distinct characteristics. The researcher, to some degree, becomes part of the culture being studied as he or she talks directly to the participants, observing their behaviors within the participants' context (Wiersma & Jurs, 2009). Data is collected in the natural setting of the participants who experience the issue or problem. The researcher triangulates between interviews, observations, and documents in collecting data (Creswell, 2009). The "emergent design" (McMillan & Schumacher, 1997, p. 393, as cited in Wiersma & Jurs, 2009), or "working design" (Smith & Glass, 1987, p. 259, as cited in Wiersma & Jurs, 2009), is an initial plan for research that cannot be tightly prescribed but may change after the researcher enters the field. The researcher describes what he or she sees, hears, and understands, and, therefore, is considered an interpretive field (Wiersma & Jurs, 2009). Holistically, the

researcher develops complex pictures of the problem, reporting multiple perspectives or realities, therefore, sketching a larger picture that emerges (Wiersma & Jurs, 2009). Researchers analyzed Hill's (2002) research to determine what qualitative characteristics may exist and to understand the author's similarities and differences when using qualitative research.

### **Qualitative Methods**

**Research questions.** Hill's (2002) research did not provide exact research questions, but did explain the direction of his research. Hill examined the service delivery system for homeless youths that was created by a public-private partnership between the business community, nonprofit service providers, and governmental entities of Portland, Oregon, but no services were found for these teenagers. Once the research questions were developed, an instrument can be developed.

**Measurement and instrumentation.** Hill's (2002) researchers blended in with their samples, allowing them to observe and interview their participants without being caught as an outsider and contaminating their own data. The researchers wrote notes as they observed their subjects interact within their society. Blending into these groups also allowed the researchers to interview their participants, discovering what the participants' lives consisted of, what improvements could be made in the participants' lives, and how these improvements could be implemented. How each aspect of their instrument was to be measured was never mentioned. Once these instruments are established, they must be validated.

**Validity processes.** Hill's (2002) study exhibited the validity processes in order to conduct his study. His study suggested that the use of ethnography to examine service delivery had increased significantly in the past 20 years. Arnold and Price (1993, as cited in Hill, 2002) used ethnography in their study to explore the complex relationship between white-water rafting

experiences and consumer levels of satisfaction. Celsi, Rose, and Leigh (1993, as cited in Hill, 2002) conducted an ethnographic study of the skydiving subculture and its impact on the voluntary consumption of high-risk services. Hirschman (1992, as cited in Hill, 2002) investigated the use of a 12-step program service (e.g., Narcotics Anonymous) by addicts through her weekly attendance at two different chapters. With the validity process established, the sampling procedures can take place.

**Sampling procedures.** Hill's (2002) research included the population of Portland, Oregon. His sampling size included (a) homeless families, (b) runaway adolescents escaping physical and sexual abuse, (c) throwaways discarded by their parents or guardians, (d) youths abandoning foster care, and (e) children who grew up on the streets. To prepare for their observations, Hill's team was trained in specific areas of their research. Van Mannen (1988, as cited in Hill, 2002) attended training at a police academy so that his presence in squad cars would arouse little suspicion from the officers that he accompanied on the job. Hill (2002) became a volunteer at a shelter for homeless women and their children to gain their trust so that they would reveal their experiences of homelessness. Hill and Wright (1998, as cited in Hill, 2002) acted as life-skills consultants to incarcerated juvenile delinquents at a religious-affiliated rehabilitation facility to have a legitimate reason for interviewing inmates. With their instrument and sampling in place, Hill's team could begin their design.

### **Qualitative Design**

Since the population of Portland, Oregon has changed due to a sudden phenomenon that caused teens to become homeless, Hill's (2002) design would fit the phenomenological (Lodico et al., 2010) approach. To understand these teens' situation, Hill's researchers would need to "understand the meaning of the experience from the perspective of the participant" (Lodico et al., 2002, p. 270). To do this, Hill and his team would have to conduct numerous in-depth semi-

structured interviews that would involve “silent reflection” and “several group or one-on-one interviews with participants” (Lodico et al., 2002, p. 271). Once Hill’s research has been conducted, their results need to be analyzed.

### **Qualitative Analysis**

Hill’s (2002) data appeared dependable as his analysis explained how he conducted his study and collected his data. In step 1, Hill created an understanding of different perspectives of public and private constituencies interested in fostering this partnership. Step 2 summarized divergent perspectives. In step 3, themes were identified and developed that best captured the evaluation. Step 4 developed relationships among themes to be explored in order to develop comprehensive understanding of public-private partnership. Even though Hill’s researchers appeared to have been well trained in order to produce the necessary results, it seemed credible that Hill and his researchers may have accurately represented what their participants thought, felt, and did where Hill’s research processes influenced the teens’ thoughts, feelings, and actions. Conducting research not only involves producing professional results, but the researcher has the responsibility of being proactive in synthesizing the results to promote social change.

### **Reporting and Contextualizing Research for Social Change**

Once all research had been conducted, Hill (2002) and Anderson et al. (2002) could begin synthesizing their data, share their implications and described how their research could improve their fields, and contribute to social change.

### **Method of Synthesis**

**Meta-ethnography.** In synthesizing data in their quantitative study, Anderson et al. (2002) displayed their outcomes by what Strike and Posner (1983, as cited in Barnett-Page & Thomas, 2009) proposed as the meta-ethnography method. Instead of proposing a meta-analysis approach, Strike and Posner, instead, considered meta-ethnography where “separate parts are

brought together to form a whole“ (p. 5). As Anderson et al. (2002) displayed each of their independent variables in a table and figure in their study, these same variables were also compared to each other in other tables and figures in other parts of their study. This comparison is an example of what Strike and Posner (as cited in Barnett-Page & Thomas, 2009) considered as one of three methods of meta-analysis, reciprocal translational analysis, a “translation of concepts from individual studies into one another” (p. 5).

**Framework synthesis.** The best synthesis method that could describe Hill’s (2002) qualitative study results would be the “framework synthesis” (Barnett-Page & Thomas, 2009, p. 10). After Hill’s team spent three years blending in and working with their sample, his team produced tremendous amount of data in the form of interview notes, observation field notes, minutes from meetings, and handouts from various speakers. Brunton et al. (2006) and Oliver et al. (2008) developed this framework synthesis approach to produce large amounts of textual data (transcripts, field notes, etc.) (as cited in Barnett-Page and Thomas, 2009).

### **Implications**

Careful analysis of how CAOs (Anderson et al., 2002) have been trained to become community college presidents uncovered a trend where about 70% of all community college presidents would be retiring in the next 10 years. If this trend were to continue, this would imply that community colleges would need to consider training younger managers, who would have the potential of becoming effective CAOs. These potential CAOs must be able to gather and analyze information effectively then communicate (verbal and written) it to their subordinates. Potential CAOs need to be effective at human relations (e.g. motivating, communicating, and collaborating with others to accomplish the mission). Hill’s (2002) results brought about some implications. In order to bring about immediate action to better serve the homeless teens in

certain parts of Portland, Oregon, Portland's government has suggested that in order for its city to save money, only those organizations whose businesses are frequented by these teens should be more flexible and creative in their approaches to dealing with these situations.

### **Future Research**

In comparing male and female COAs, Anderson et al. (2002) indicated that both genders appeared to be identical in the order in which they rank in managerial roles. Female COAs, according to ANOVA, placed more emphasis on the leader, liaison, and disseminator roles than did males. As the reasons were not mentioned, this would provide for a future study. Hill (2002) found that the best approach to deter disruptive behavior caused by homeless teens is for businesses, which are within close proximity to these teens, to find alternate avenues to deal with these potential behaviors. As companies are in the business of attracting customers, they should be trained to anticipate behaviors exhibited by homeless teens (e.g. camping close to businesses that could prevent customers from visiting) and how to better service their needs. Future study could include approaching these teens in determining what their needs may be and how their needs can be met.

### **Audience**

Research most likely showed that Anderson et al. (2002) were addressing the administrative staff of community colleges and management candidates who are managers being trained to become community college presidents. Anderson et al. (2002) research mentioned trends that have suggested that staff members may have to reorganize their training methods and begin considering how and when to begin training instructors and department heads into managers who could be considered as presidents. Managers could seek assistance from these community colleges as to what skills and education managers would need to have before

beginning training as presidents of some colleges. Other audience members that could be attracted to this research could include these journal publications, *Active Learning in Higher Education*, *Journal of College Student Development*, and *Journal of Higher Education*.

Hill's (2002) research appeared to be addressing organizations that have trouble deterring the homeless from the proximity of their businesses. These organizations could include liquor stores, abandoned buildings that could be used as homes, stores that sell second hand clothes, and other populated areas where these teens are always asking for a handout. Other audience members that might be interested in this type of research would include these published journals, *Homelessness and Mental Health*. New York: Cambridge University Press, *Children of Poverty: Studies on the Effects of Single Parenthood, the Feminization of Poverty, and Homelessness*. New York: Garland, and *Adolescent Runaways: Causes and Consequences*. Lexington: Lexington books.

### **Social Change**

Considering the problems that Anderson et al. (2002) have discovered in their research, namely (a) community colleges hiring managers as COAs close to their retirement age, and (b) managers being trained as COAs at a very young age, these community colleges and managers would need to understand the importance of preparing for the future. Community colleges would need to implement an immediate program where all their department heads might be eligible to become COAs.

Hill's (2002) research revealed two avenues of potential change, those organizations that can provide a service to determine how homeless teens became homeless, and those organizations that could become potential threats for homeless teens due to the vicinity of where the homeless teen population frequents these organizations. Establishments such as human

resource services and church services can provide guidance to these homeless teens to enter a program to quit drugs and possibly return to school and/or apply for a job. These services could work with the parents to provide a better life for these teens. If these homeless teens are that desperate to be on their own, those businesses that are frequented by these teens could provide employment to help them develop the skills they would need to become productive members of society.

### **Conclusion**

When conducting research, two research types become the norm, quantitative and qualitative. For the two articles of these research types, their processes of observing, obtaining, displaying, and discussing their information showed distinct differences. Both articles shared similar characteristics in their design, research questions, definitions, instrumentation, measurements, validity and reliability process, and sampling process. Anderson et al. (2009) quantitative research used the experimental design to determine what causes may exist between COAs and managers, even though a specific design terminology lacked. His results were explained qualitatively. Hill (2002) used the phenomenological approach to investigate causes of homeless teens. He also used the qualitative approach for his results. It needs to be clear as to what design to use when dealing with different types of research as its results can be unclear.

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