Research Design and Methodology II

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**Assignment #3 – Essay**

For Core 4, continue analyzing the fictional study "Religiosity and Social Behavior in a Diverse Community." In a 7-10 page essay, conduct a comprehensive analysis of research design elements related to quasi-experimental vs. correlational designs. Additionally, reflect on how these concepts apply to your dissertation research idea or proposal using the following specific criteria:

Introduction - Compose an overview of the sections of this assignment and justify why they are essential for research design and methodology in dissertation research.

Design Differentiation (1 page): Explain quasi-experimental and correlational research designs' key characteristics, strengths, and limitations. Use real-world examples to illustrate their application in research.

Valid Instruments (1 page) - Discuss the importance of selecting valid research instruments and examining variables and subscales within the research design. Provide examples of how instrument validity and reliability impact research outcomes. Find and describe at least one validated instrument that could measure the dependent variables of the fictional study (religiosity, social justice, and social cohesion), describe it, and cite it.

Hypothesis Formulation (1 page): Compose appropriately formatted hypotheses based on research questions. Analyze the role of hypotheses in guiding research and the distinction between null and alternative hypotheses. Use examples from published research to illustrate effective hypothesis formulation.

Evaluation of Null and Alternative Hypotheses (1 page): Evaluate the difference between null and alternative hypotheses and the criteria for rejecting a null hypothesis. Discuss the significance of hypothesis testing in research and the potential errors associated with it. Provide examples from published studies to illustrate instances where null hypotheses were appropriately rejected or retained.

Literature Review Structure (2-3 pages) - Reflect on the purpose and structure of a dissertation literature review. Analyze its critical role in the research process, its connection to problem formulation and research design, and the typical components and organization of a literature review in a dissertation. Provide examples of effective literature reviews from published dissertations.

Reflection on Personal Dissertation Idea (1-2 pages) - Apply the concepts and insights from the analysis to your dissertation research idea. Discuss how understanding research design, hypothesis formulation, and literature review structures can inform and improve your research plans.

The assignment should be 7-10 pages long. Cite research design experts from your developmental readings and use proper APA formatting.

**Introduction**

Research design and methodology are crucial aspects of a dissertation, as they are the foundation for any study. Research design and methodology encompass various approaches and methods tailored to the nature of the study. However, before a research design is chosen, many components must be considered, and multiple elements must be thoroughly understood and adhered to before writing the dissertation. First, the topic is researched for all existing scholarly works. This will include articles, books, and other sources relevant to the research topic. Next, the research design choice is guided by carefully analyzing the problem statement, research questions, conceptual/theoretical framework, and analysis of the relevant literature (Asenahabi, 2019, p. 1). That analysis is referred to as the literature review. A well-constructed literature review summarizes existing research and critically evaluates and synthesizes information, laying the foundation for the new study's research questions, objectives, and methodology. Then, the researcher can formulate a hypothesis that further drives the research. In addition, research design can be divided into qualitative and quantitative research. “Qualitative research is subjective and exploratory. It determines relationships between collected data and observations. It is usually done through interviews with open-ended questions, observations described in words, etc. (Singh, 2023, p. 1).” Several methods are associated with qualitative research: case studies, narrative research, phenomenological research, grounded theory, ethnography, and action research (Asenahabi, 2019, p. 1). “Quantitative research is the technique and measurements that produce quantifiable/discrete values (Kothari, 2007). The collected data results from empirical observations and measures. These methods require a good amount of time and planning. They always tend to have closed-ended responses (Asenahabi, 2019, p. 1).” There are also two methods associated with quantitative research: experimental (true experiment, quasi-experiments) and non-experimental (survey research, causal-comparative research, correlation design) (Asenahabi, 2019, p. 3). Then, there is the Mixed Methods research design. “Mixed method research design integrates qualitative and quantitative research and data in a research study. According to Burke-Johnson et al. (2007), this is an empirical research in which a researcher combines elements of qualitative and quantitative research approaches for the broad purposes of breadth and depth of understanding and corroboration (Asenahabi, 2019, p. 9).” As stated earlier, choosing the most appropriate design method depends on the research question, resources, and nature of the investigated phenomenon. Then, decisions about how data is to be collected, e.g., using certified instruments, observation interviews, questionnaires, queries on existing databases, or a combination of these, are to be made (Tobi & Kampen, 2018, p. 5).

For example, in analyzing the fictional research case study, “*Religiosity and Social Behavior in a Diverse Community,”* a mixed-methods approach was used. The data collected was both quantitative and qualitative. The quantitative phase used surveys to assess participants’ religiosity levels, engagement in community activities, and attitudes toward social justice issues. The qualitative phase consisted of focus group discussions to gain in-depth insights into participants’ experiences, beliefs, and perceptions of religiosity and social behavior (*General Helps, 2023 - Google Drive*, 2023). Valid instruments were used to collect the data, experiments were conducted, and the data analysis consisted of quasi-experimental and correlational designs, allowing for understanding such a complex relationship like religiosity and its impact on social behavior.

**Design Differentiation** (1 page)

Design differentiation of a research project involves creating a unique and distinctive approach to the overall structure, methodology, and execution of the study. It is about meaningfully setting one's research apart from others. As stated earlier, two types of research methods are used when determining the design of a research project: qualitative and quantitative. In the research topic “*Religiosity and Social Behavior in a Diverse Community,”* the quasi-experimental and correlational design was a mixed-method approach. Some pros and cons exist for using these methods. When quasi-experimental design is used, an intervention is included in the design. Unlike the experimental design, which tends to use randomization and a control group, quasi-experimental designs do not always include these components (Rutberg & Bouikidis, 2018, p. 2). “Instead, there may be an intervention put into place with outcome measures pre- and post-intervention implementation, and a comparison used to identify if the intervention made a difference (Rutberg & Bouikidis, 2018, p. 2).” In addition, in quasi-experiments, researchers do not have complete control over the assignment of participants to groups, and factors such as pre-existing conditions or self-selection may influence the grouping. While quasi-experimental designs may lack the strict control of actual experiments, they are often used when random assignment is impractical or ethically challenging. Researchers still manipulate and observe an independent variable's effects, but the design allows for more flexibility in real-world settings. However, drawing causal conclusions from quasi-experimental studies requires careful consideration of potential confounding variables.

Correlational research design examines the relationship between two or more variables without manipulating them. It uses statistical measures like correlation coefficients. A correlation coefficient examines the relationship between two variables, but both are continuous. In other words, they are variables that can assume any value along some underlying continuum; examples include height, age, test scores, and income (Salkind & Frey, 2019a, p. 77). A correlation reflects the dynamic quality of the relationship between variables. Doing so allows us to understand whether variables tend to move in the same or opposite directions in relationship to each other. The correlation is called direct or positive if variables change in the same direction. The correlation is indirect or negative if variables change in opposite directions (Salkind & Frey, 2019a, p. 77). In terms of correlation as it relates to the research topic “*Religiosity and Social Behavior in a Diverse Community,”* the researcher explored the correlation of race to religiosity level, engagement in community service, attitudes towards social justice issues, and social cohesion scores (*General Helps 2023 - Google Drive*, 2023). It is important to note that correlation does not imply causation. In conclusion, design differentiation involves creating a research plan, methodology, or approach that sets one’s study apart from others in the field.

**Valid Instruments** (1 page)

A valid instrument is required to collect the data to analyze the research. Selecting valid instruments is crucial as it ensures that the tool accurately measures what it intends to measure. Validity is, most simply, the property of an assessment tool that indicates that the tool does what it says it does. A valid test that measures what it is supposed to and works well for its intended purpose (Salkind & Frey, 2019b, p. 116). By this definition, the instrument used must also be reliable. For example, a questionnaire is one of the most widely used tools to collect data, especially in social science research. The main objective of the questionnaire in research is to obtain the most reliable and valid information. Thus, the accuracy and consistency of the survey/questionnaire form a significant aspect of the research methodology, which is known as validity and reliability (Taherdoost, 2016, p. 1). Therefore, researchers must be able to rely on a valid and reliable tool.

Choosing instruments based on the specific aspects and dimensions one wants to measure within each construct is essential. As in the fictional study "Religiosity and Social Behavior in a Diverse Community," an instrument would be needed to measure the effects of religiosity regarding age, race, social behavior, community values, and social cohesion. The effects of religiosity on age, race, social behavior, and community values have been addressed. However, the study of the relationship between community values and social cohesion is still in its infancy in many ways, according to Breidahl et al. (2018) (Breidahl et al., 2018, p. 6). Therefore, a valid scale is challenging to find. Nevertheless, the “Duke University Religion Index (DUREL)” is commonly used for religiosity (Hicks, 2022, p. 28). According to Martins et al. (2021), the DUREL is a brief five-item measure, which has been described as a measure of religious commitment. It assesses the three significant dimensions of religious involvement: organizational religious activities, non-organizational religious activities, and intrinsic religiosity (Martins et al., 2021, p. 2). Again, validity refers to the extent to which an instrument assesses the construct it claims to measure, and reliability is about the consistency and stability of the measurement over time. Valid instruments ensure that data collected accurately reflects the intended constructs, avoiding measurement error. Reliable instruments provide consistent results, enabling researchers to make informed decisions based on stable measurements. In summary, valid and reliable instruments enhance the quality and trustworthiness of research outcomes, providing a solid foundation for drawing meaningful conclusions and making informed decisions.

**Hypothesis Formulation** (1 page)

The hypothesis is a critical step in the scientific method that shapes the trajectory of the research. Several vital aspects contribute to the effectiveness of a hypothesis, influencing the clarity, testability, specificity, and relevance to the research question. The research question guides the creation of the hypothesis, and in turn, the hypothesis will determine the techniques one will use to test it and answer the question that was initially asked (Salkind & Frey, 2019b, p. 127).

To begin with, a hypothesis should be clear. A clear hypothesis communicates the expected relationship between variables, leaving no room for ambiguity. Both researchers and readers should easily understand it. The role is to reflect the general problem statement or question that motivated the research question in the first place (Salkind & Frey, 2019b, p. 127). Therefore, a well-crafted hypothesis provides a precise prediction that can be empirically tested, effectively guiding the research process.

Next, testability is another critical aspect. A hypothesis should be framed to allow it to be empirically tested and validated, as stated above. This testability not only adds rigor to the research process but also facilitates the establishment of causation or correlation between variables, contributing to the advancement of scientific knowledge. Scientists and researchers make a significant distinction regarding the hypothesis. That distinction exists between the sample and the population. While the hypotheses usually describe a population, hypothesis testing deals with a sample, and the results are generalized to the larger population (Salkind & Frey, 2019b, p. 128).

Then, there is specificity. Specificity enhances the quality of a hypothesis. A specific hypothesis outlines the exact nature of the expected relationship, leaving no room for broad interpretations. Moreover, a well-formulated hypothesis should directly relate to the overarching research question presented, as it is a direct extension of the original question asked by the researcher, reflecting their interests and motivation (Salkind & Frey, 2019b, p. 135). This specificity aids researchers in designing precise experiments and collecting relevant data, streamlining the research process and minimizing potential confounding factors. It serves as a focused guide, aligning the investigation with the primary objective. This relevance ensures that the research effort is purposeful and contributes meaningfully to the existing body of knowledge.

In summary, the most critical aspects of hypothesis formulation involve constructing a clear, testable, specific, and relevant statement that guides the research process. These elements collectively contribute to the hypothesis's robustness and effectiveness, enabling researchers to conduct meaningful investigations and make valuable contributions to their respective fields.

**Evaluation of Null and Alternative Hypotheses** (1 page)

Evaluating null and alternative hypotheses is also a critical aspect of the scientific method, guiding researchers in making informed conclusions based on empirical evidence. Researchers typically formulate a null hypothesis (H0) and an alternative hypothesis, representing the assertion they seek to demonstrate through statistical analysis. Some key considerations in this process include clarity, falsifiability, statistical significance, and practical significance.

First, the null hypothesis acts as a starting point and a benchmark against which the actual outcomes of a study can be measured (Salkind & Frey, 2019b, p. 130). It acts as a starting point because it is what is accepted as accurate in the absence of any other information. For example, “there will be no difference between the average score of 9th graders and the average score of 12th graders on a memory test (Salkind & Frey, 2019b, p. 130).” This lack of a relationship as a starting point is the significance of this topic. It becomes the researcher’s job to prove a difference, and until then, one must assume that there is no difference. Moreover, a statement of no difference or no relationship is exactly what the null hypothesis is about (Salkind & Frey, 2019b, p. 130). The null hypothesis typically posits no effect or difference, while the alternative hypothesis suggests the presence of an effect or difference. Articulating these hypotheses is essential for designing experiments and analyzing results, ensuring researchers have a precise framework for testing their assumptions.

Next, falsifiability is a cornerstone of scientific hypotheses. A well-constructed hypothesis should be testable and potentially refutable by empirical evidence. In other words, a null hypothesis is formulated to be falsifiable, meaning there must be a way to conduct an experiment or analysis that could disprove or reject it. For example, universal hypotheses like ‘all ravens are black.’ Although there is no *a priori* bound on the amount of observation computation or proof search required, the hypothesis may be falsified by suspending judgment until the hypothesis is decisively refuted by the provision of a non-black raven (Genin, 2022, p. 3). The ability to falsify hypotheses enhances the reliability and objectivity of scientific inquiry. Providing clear criteria for potential rejection ensures that scientific claims are grounded in evidence and can be scrutinized objectively. This falsifiability criterion is fundamental to the scientific method, promoting transparency and rigor in pursuing knowledge.

Statistical significance is a critical metric in hypothesis evaluation. Statistical significance is the degree of risk one is willing to take that will cause one to reject a null hypothesis when it is true (Salkind & Frey, 2019b, p. 170). Researchers use statistical tests to determine whether observed results are likely to have occurred by chance. A low p-value, often set at 0.05, indicates the statistical significance and provides evidence against the null hypothesis. Careful consideration of statistical significance helps researchers draw valid conclusions from their data, minimizing the risk of making erroneous claims.

Practical significance complements statistical significance by addressing the real-world importance of observed effects. While statistical tests can identify significant differences, practical significance assesses whether these differences have meaningful implications in the context of the research question. Researchers must weigh statistical and practical significance to ensure the relevance of their findings beyond statistical precision.

In conclusion, evaluating null and alternative hypotheses is a multifaceted process crucial for sound scientific inquiry. Clarity in hypothesis formulation, emphasis on falsifiability, consideration of statistical significance, and assessment of practical significance collectively contribute to the strength of hypothesis evaluation. Researchers who navigate these aspects thoughtfully are better equipped to draw meaningful conclusions from their studies, advancing knowledge and contributing to the scientific discourse (Benjamin & Berger, 2019, pp. 2–3).

**Literature Review Structure** (2-3 pages)

A literature review critically analyzes and synthesizes existing scholarly works, articles, books, and other sources relevant to a particular research topic. Considering prior, relevant literature is essential for all research disciplines and projects. Like the research design, the literature review can be conducted for quantitative or qualitative studies. There are various literature reviews, such as narrative or integrative reviews, systematic reviews, and meta-analyses (Snyder, 2019, p. 1). However, a successful review involves three major stages: planning, conducting, and reporting the review (Xiao & Watson, 2019, p. 10).

In the planning stage, the researcher identifies the need for a review, determines research questions, and develops a review protocol. When conducting the review, the researchers identify and select primary studies and extract, analyze, and synthesize data. Finally, when reporting the review, the researchers write the report to spread their findings from the review (Xiao & Watson, 2019, p. 10).

According to Xiao & Watson (2019), despite the differences in procedures across various types of literature reviews, all the reviews can be conducted following eight common steps: (1) formulating the research problem; (2) developing and validating the review protocol; (3) searching the literature; (4) screening for inclusion; (5) assessing quality; (6) extracting data; (7) analyzing and synthesizing data; and (8) reporting the findings (p. 10). Moreover, the literature review process can be best characterized as repetitive. Repeating steps and making improvements or adjustments with each repetition is how one can achieve the desired outcome or result (Xiao & Watson, 2019, p. 10). As stated earlier, a literature review is used to research a topic and provide background information to help readers understand the context and evolution of the topic. Then, it is customary to develop the conceptual framework by introducing the key concepts and variables related to your research questions. Next, the literature should be grouped into themes or categories based on commonalities or differences by highlighting significant trends, debates, or schools of thought. Next, the literature review should discuss the methodologies used in the studies and evaluate the strengths and limitations of the researcher's approaches. It should also highlight gaps and inconsistencies relevant to one’s study or areas where further research is needed and contribute to the rationale for one’s study. Randolph (2019) states that if the literature review is flawed, the remainder of the dissertation may also be viewed as flawed because “a researcher cannot perform significant research without first understanding the literature in the field” (Boote & Beile, p. 3, 2005) (Randolph, 2019, p. 1). Consequently, as with all research, the value of an academic review depends on what was done, what was found, and the clarity of reporting (Snyder, 2019, p. 2).

In conclusion, another essential purpose for writing a literature review is to provide a framework for relating new findings to previous findings in the discussion section of one’s dissertation (Randolph, 2019, p. 2). Randolph (2019) makes it clear that “without establishing the state of the previous research, it is impossible to establish how the new research advances the previous research (p. 2).” The literature review is labor-intensive and often requires three to six months of effort (Randolph, 2019, p. 1). Finally, Randolph (2019) also states that the literature review is a “legitimate and publishable scholarly document” (LeCompte & colleagues, 2003, p. 124) (p. 2).

Finally, below is a list of public dissertations with effective literature reviews:

* *Goal orientation theory and its relationship with motivation in the elementary classrooms of the Montessori public schools project in Puerto Rico* (Mulero-González, 2022).
* *Links between screen time, Montessori preschool exposure, and working memory*(Larsen Mamani, 2022).
* *Purpose development in Montessori elementary students* (Skau, 2017).
* *Investigating if Montessori education creates deep learning ecologies in the classroom: a case study* (Vivant, 2022).
* *Critical Montessori education: centering BIPOC Montessori educators and their anti-racist teaching practices* (D’Cruz Ramos, 2023).

**Reflection on Personal Dissertation Idea** (1-2 pages)

A researcher must understand research design, hypothesis formulation, and literature review structures to enhance the clarity and effectiveness of their research plan. First, a distinctive approach to the overall structure, methodology, and execution of the study is required, especially if one wants to set their research apart from others. If the researcher is familiar with various research designs, then it will enable them to choose the most appropriate method for their study. A well-designed research plan minimizes biases and ensures valid and reliable data collection.

Next, having a clear hypothesis provides direction for the research. Therefore, one has to know how to formulate testable hypotheses to ensure precision throughout the investigation. A well-crafted hypothesis facilitates the design of experiments and the identification of dependent and independent variables. Then, understanding the structure of a literature review aids in logically organizing one’s information. This makes it easier to synthesize and draw meaningful conclusions. When a researcher understands the synergy between the above research elements, it ensures that one's research plans are well-grounded, logically structured, and aligned with existing knowledge, increasing the likelihood of meaningful contributions to the field.

Applying these elements to my research plan has been challenging. I am interested in improving the educational outcome for children of color with low income. Having taught in a Montessori environment for 15 years has enabled me to experience first-hand the results of student success who were educated using the Montessori Method. I have read countless articles and dissertations that support my theory. My research question is:

**What is the effect of the Montessori Method on the educational outcomes of students of color and low-income families?**

Research regarding the Montessori Method indicates that it significantly improves the achievement level of children of color. However, the research also indicates that when the Montessori Method is not applied with fidelity, it affects student achievement levels. The quality of Montessori is always in question in every study because all or very little of her system can be implemented. “Quality entails teachers adequately trained with the Association Montessori Internationale (AMI) certifications, which Maria Montessori founded to carry on her work, is the definition of being trained to teach her method with fidelity (Lillard, 2018, p. 4).” In addition, educators trained with the American Montessori Society (AMS) certification are also trained with the capacity to teach her method with fidelity (Belcher, 2015, p. 87). The issues surrounding the implementation of the Montessori Method with fidelity are more of a concern for students who attend public Montessori schools than private ones. Lillard (2018) speaks to a study conducted by Else-Quest & Lillard (2006), where they compared 5- and 12-year-olds in a public AMI Montessori school with children in other schools (Lillard, 2018, p. 4). The results were that the Montessori students not only performed better on the academic assessments but also engaged in more positive shared peer play and possessed a more robust, healthier sense of school community (Lillard, 2018, p. 4). The early works by Debs and Brown (2017) examined the benefits of the Montessori Method for students of color in public Montessori schools (Debs & Brown, 2017, p. 1). Their research found that Montessori education offered both opportunities and limitations for students of color in attending diverse schools, developing executive functions, achieving academically, accessing early childhood education and culturally responsive education, minimizing racially disproportionate discipline, and limiting overidentification for special education (Debs & Brown, 2017, p. 1). In addition, the research by Deb and Brown (2017) identified that over the last 40 years, public Montessori schools had expanded exponentially to over 500 schools serving approximately 125,000 students (Debs & Brown, 2017, p. 2). This data is significant because, in a survey of 300 of these public Montessori schools in 2012-2013, 54% of students were students of color, comprising Black, Latino, Asian, Native American, Pacific Islander, and multiracial students (Debs & Brown, 2017, p. 2). They concluded that although Montessori has positively affected students of color in many of the areas above, e.g., developed executive functions, academic achievement, and access to early childhood education, further research into their experiences in Montessori schools is still needed (Debs & Brown, 2017, p. 2). My purpose for attempting such a study is rooted in the need for socioeconomically disenfranchised students to improve their quality of life. It is no secret that education has often been associated with the success of impoverished people. I am one such success story, and there are countless others.

WORKS CITED

Asenahabi, B. M. (2019). *Basics of research design: A guide to selecting appropriate research design*. *6*(5).

Belcher, K. A. (2015). *Policy reservations: Early childhood workforce registries and alternative pedagogy teacher preparation* [Ph.D., Indiana University]. https://www.proquest.com/docview/1729124894/abstract/AE621A26B03F4B62PQ/1

Benjamin, D. J., & Berger, J. O. (2019). Three recommendations for improving the use of p-values. *The American Statistician*, *73*(sup1), 186–191. https://doi.org/10.1080/00031305.2018.1543135

Breidahl, K. N., Holtug, N., & Kongshøj, K. (2018). Do shared values promote social cohesion? If so, which? Evidence from Denmark. *European Political Science Review*, *10*(1), 97–118. https://doi.org/10.1017/S1755773916000266

D’Cruz Ramos, G. O. (2023). Critical Montessori education: Centering BIPOC Montessori educators and their anti-racist teaching practices [Ph.D., University of Maryland, College Park]. In *ProQuest Dissertations and Theses*. https://www.proquest.com/docview/2832692337/abstract/79BB08C6CB4A4CC0PQ/1

Debs, M., & Brown, K. (2017). Students of color and public Montessori schools: A review of the literature. *Journal of Montessori Research*, pp. *3*, 1. https://doi.org/10.17161/jomr.v3i1.5859

*General Helps 2023—Google Drive*. (2023, August 11). https://drive.google.com/drive/folders/1uz6ME3kj7h1iAANu01g6cLjZ\_iOfpuM3

Genin, K. (2022). On falsifiable statistical hypotheses. *Philosophies*, *7*(2), Article 2. https://doi.org/10.3390/philosophies7020040

Hicks, M. Y. (2022). *The relationship between religiosity religion and attitudes toward suicide* [Ph.D., Grand Canyon University]. https://www.proquest.com/docview/2731032404/abstract/D1EDE3824A14144PQ/1

Larsen Mamani, P. L. (2022). Links between screen time, Montessori preschool exposure, and working memory [Ph.D., Walden University]. In *ProQuest Dissertations and Theses*. https://www.proquest.com/docview/2747902366/abstract/79BB08C6CB4A4CC0PQ/11

Lillard, A. S. (2018). Rethinking education: Montessori approach. *Current Directions in Psychological Science*, *27*(6), 395–400. https://doi.org/10.1177/0963721418769878

Martins, H., Caldeira, S., Domingues, T. D., Vieira, M., & Koenig, H. G. (2021). Validation of the Duke University Religion Index (durel) in Portuguese cancer patients undergoing chemotherapy. *Journal of Religion and Health*, *60*(5), 3562–3575. https://doi.org/10.1007/s10943-020-01143-z

Mulero-González, V. (2022). Goal orientation theory and its relationship with motivation in the elementary classrooms of the Montessori public schools project in Puerto Rico [M.Ed., University of Puerto Rico, Rio Piedras (Puerto Rico)]. In *ProQuest Dissertations and Theses*. https://www.proquest.com/docview/2677615596/abstract/1DF30172BFC24393PQ/27

Randolph, J. (2019). A guide to writing the dissertation literature review. *Practical Assessment, Research, and Evaluation*, *14*(1). https://doi.org/10.7275/b0az-8t74

Rutberg, S., & Bouikidis, C. D. (2018). Focusing on the fundamentals: A simplistic differentiation between qualitative and quantitative research. *Nephrology Nursing Journal*, *45*(2), 209–213.

Salkind, N. J., & Frey, B. B. (2019a). *Statistics for people who (think they) hate statistics* (7th edition). SAGE Publications, Inc.

Salkind, N. J., & Frey, B. B. (2019b). *Statistics for people who (think they) hate statistics* (7th edition). SAGE Publications, Inc.

Singh, S. (2023, March 14). *What is research design? Types, elements, and examples | researcher. Life*. https://researcher.life/blog/article/what-is-research-design-types-examples/

Skau, A. (2017). Purpose development in Montessori elementary students [M.A., Saint Mary’s College of California]. In *ProQuest Dissertations and Theses*. https://www.proquest.com/docview/2076405458/abstract/E0FD591A8B8C4D73PQ/11

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, pp. *104*, 333–339. https://doi.org/10.1016/j.jbusres.2019.07.039

Taherdoost, H. (2016). *Validity and reliability of the research instrument; how to test the validation of a questionnaire/survey* (SSRN Scholarly Paper 3205040). https://doi.org/10.2139/ssrn.3205040

Tobi, H., & Kampen, J. K. (2018). Research design: The methodology for interdisciplinary research framework. *Quality & Quantity*, *52*(3), 1209–1225. https://doi.org/10.1007/s11135-017-0513-8

Vivant, S. (2022). Investigating if Montessori education creates deep learning ecologies in the classroom: A case study [Ph.D., Northcentral University]. In *ProQuest Dissertations and Theses*. https://www.proquest.com/docview/2805345569/abstract/1DF30172BFC24393PQ/6

Xiao, Y., & Watson, M. (2019). Guidance on conducting a systematic literature review. *Journal of Planning Education and Research*, *39*(1), 93–112. https://doi.org/10.1177/0739456X17723971