Research Methodology

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Introduction

In this paper, I will seek to deepen my understanding of a range of methodological research approaches, types of research, research designs, and research methods. This study will serve as preparation for my future research project, where I will gather data in my own work setting, in addition to readying me to handle the research ethically, and be prepared for issues of insider research. To begin, I will define and discuss the idea of a research paradigm. Then I will examine ontology, axiology, and epistemology and their impact on the research paradigm. Next I will move into describing and critically evaluating epistemological approaches. Though there are many paradigms available to a researcher, for purposes of this paper, I will evaluate three. I will assess the similarities and differences, and strengths and weaknesses of pragmatism, positivism, and constructivism. Then, I will spend time with research designs and their ability to interpret social nuance within the human experience, specifically examining grounded theory and action research. Additionally, I will look at data acquisition, specifically investigating qualitative, quantitative, and mixed methodological approaches. Qualitative data analysis methods investigate nuanced human behaviors and experience, while quantitative methods gather numerical data, and mixed methods use both in tandem (Day, Sammons, and Gu, 2008). Finally, I will discuss the ethics of research and the implications of insider research as it pertains to the practitioner researcher. This research will provide a path in my future work-based research projects as both a masters student and a practicing voice educator in a collegiate, pre-professional musical theatre setting.

Paradigms

How a researcher approaches research is called a paradigm (Denscombe, 2010). A paradigm can be defined as a collective worldview that delineates the shared beliefs and values in an area of discipline and serves as a guide in problem solving (Schwandt, 2007). Simply stated, a paradigm is how a researcher approaches research (Denscombe, 2010). A research paradigm is formed by the researcher's ontology, epistemology, and axiology, and serves to orient both the researcher's thinking and process (Bogdan and Biklen, 1998). Looking critically at paradigms, they can serve as an organizing structure or a source of direction for research endeavors, but they also have the potential to limit intellectual curiosity and creativity, and cause researchers to be blind to emerging phenomena (Feilzer, 2010).

According to Edelheim (2014), ontology, axiology, and epistemology create the foundations for people to understand their world, make decisions in it, and choose what matters both individually and societally. Ontology is the study of being (Edelheim, 2014). It creates the lens through which we view and make sense of our existence and reality (Killiam 2013). A researcher's ontology is their understanding of what exists (Edelheim 2014). Axiology is the

study of value, goodness, and ethical behavior (Edelheim 2014, Killiam 2013). It alludes to what the researcher considers important and morally correct (Killiam, 2013). Epistemology is the study of the theory of knowledge (Sol and Heng, 2022). It provides the explanation for a culture jointly deciding what is true or false (Edelheim, 2014), and interprets the relationship between knowledge and the researcher as new discoveries are being made (Killiam, 2013).

There are many research paradigms (Sol and Heng, 2022). For purposes of this paper I will discuss pragmatism, positivism, and constructivism. Pragmatism considers reality and truth to be constantly in flux; it acknowledges that there are multiple realities, and focuses on real world problem solving (Feilzer, 2010). Pragmatism embraces multiplicity of viewpoint and method and emphasizes solutions to the research problem (Cresswell, 2014). It is not devoted to a single philosophy, but allows researchers to navigate efficiently and freely based on a mentality of what works best in the moment according to perceived need (Denscombe, 2010). Inquiry combined with best response to the research question are valued over proof, as the the goal is to provide socially useful knowledge (Feilzer, 2010). Pragmatism also aids the researcher in finding balance between subjectivity and objectivity throughout the process and supports the idea that qualitative and quantitative methods of data acquisition can work together to advance the production of knowledge (Doyle, Brady, and Byrne, 2016). One of the strengths of pragmatism is the fluidity of the model and its ability to adapt in service to finding solutions to the research questions, but its weakness can be seen in the need for escaping bias and maintaining objectivity (Cresswell, 2014). I appreciate that pragmatism leans into questioning and providing useful answers for humanity over specificity and scientific process.

Positivism is defined as a paradigm, grounded in science and quantitative research, that seeks to grasp the laws of human behavior and social trends while emphasizing the value of observation for the growth and development of knowledge (Mohajan, 2020). It is rooted in the scientific method and the belief that observation, measurement, and description can decipher truth (Cresswell, 2014). Searching out impartial truth is one of the main themes of positivism, and thus, it implies an objective distance between the researcher and the subjects of the research (Mohajan, 2020). Observation and experimentation are key (Cohen, et al, 2018). Positivism believes that the study of human behavior needs to be conducted with the same procedures used in the world of natural sciences (Mohajan, 2020). Positivism's strength is rooted in its commitment to the scientific method and the quantitative, measurable, objective data that can be uncovered, but one of its weaknesses is that the quantitative data gathered has the potential to lack depth of understanding around a social phenomenon (Mohajan 2020, Cresswell 2014).

Constructivism holds to the stance that knowledge and truth are constructed by human beings through their interpretation of their own human experience, thus experience and reflection become the basis of a person's understanding of the world (Mohajan, 2020). In contrast to positivism, which sets out to prove a hypothesis, constructivists gather data as they go based on patterns that emerge from their research and believe that there can be multiple realities based on the knowledge they have built from experimental interaction with the world (Creswell 2014, Mackenzie and Knipe, 2006). Information is gathered and data is inferred, often as part of a qualitative research process (Mohajan, 2020). The theoretical perspective of a constructivist is that exploration of a particular societal norm demands investigation and analysis of lived experience through the lens of navigating their own social world (Gaus, 2017). As a result of this, constructivists need to be aware of their engagement in the process, and cognizant to the fact that they are relying on their own experience as they seek to understand and describe human nature (Chilisa and Kawulich, 2012).The strengths of the constructivist theory are the communal aspects of knowledge acquisition and the ability see the world without separation from lived experience (Gaus, 2017). Like pragmatism, this method benefits from flexibility and the ability to shift as data patterns emerge, but researchers must be aware of the potential for loss of objectivity and the propensity for bias to emerge and skew the results of the research (Chilisa and Kawulich, 2012). I am drawn to the flexibility of this paradigm because shifting as data emerges is a natural response for me.

While all three of these methods are capable of successful knowledge acquisition, there are some important distinctions between them. Pragmatism places its emphasis on inquiry and problem solving as well as flexibility necessitated by problem solving (Feilzer, 2010), while positivism relies on the scientific method to prove a hypothesis (Cresswell, 2014), and constructivism gathers and infers data based on emerging patterns that come up in the research process (Mohajan, 2020).

Research Designs

Research designs or approaches are the lens researchers can use to view and capture the varying social nuance around human experience and perspective (Mohajan, 2020). These are the practical methods of gathering research (Azulai, 2021). In reading about these research designs, I was drawn to grounded theory and action research. Grounded theory appeals to me because of its origination in data and observation as opposed to a seeking to prove an existing hypothesis. Its value on emerging data captured my attention. Looking at action research and it's demand for doing something with the new information that has been gathered also caught my interest.

Grounded theory relies on inductive strategies (Strauss and Corbin, 2014). It begins without a preconceived hypothesis; instead, it originates with gathering data around an observation (Lim, 2024a). This theory requires the researcher to remain observational and open, to develop interpretations of data, and to return to the field to continuously gather and refine data with a high value on emergence (Azulai, 2021). Delaying literature review is suggested to refrain from bias and to ensure that the results of the research are genuinely a reflection of the current study (Glaser and Strauss, 1967). Thus, emphasis is placed on getting something from data rather than bring something to data. Strengths of grounded theory are seen especially when the theories currently in existence are found to be lacking, as its strength is evident in the pioneering of new hypotheses (Lim, 2024a). Weaknesses, however, include the time consuming and resource intense nature of data collection, and the necessity of escaping bias (Lim, 2024a).

Action research, as its name suggests, seeks to blend research and practice with the pursuit of knowledge and actionable social change (Lim, 2024a). Social problems cannot be understood without the need to try and change them; actionable change is demanded by the facts that have been uncovered by the research (Azulai, 2021). Methods of obtaining the research include interviews, life stories, and fieldwork. Strengths of action research include its participatory dynamic, both in the process and the analysis, its collaborative nature, which allows insider and participant researchers to work together as stakeholders and beneficiaries of the research outcome, and the deliberate reflection and continuous improvement that happens within the cycle of looking, thinking, and acting (Lim, 2024a). Though the researchers involvement is a strength of action research, it also has the capacity to be a weakness due to the potential for subjectivity and bias. In order to escape this, methodological rigor should be applied to validate findings. Conflicts of interest are another potential challenge as the researcher has input as both observer and participant. Boundaries, ethical guidelines, and engaging the community are all helpful strategies to mitigate this weakness in action research. Proactively addressing these obstacles boosts the trustworthiness and effectiveness of action research (Lim, 2024a).

Data Analysis

Once the knowledge has been gathered, it must be evaluated and turned into useful information (Lim, 2024a). Data analysis tools including qualitative, quantitative, and mixed methodologies are important to discuss in this context (Neumann, 1987).

Comparing and Contrasting Qualitative and Quantitative Research Methods

Two basic similarities between qualitative and quantitative research are that they both use research questions and address answering their research questions with some form of observation and analyzation (Onwuegbuzie and Leech, 2005). Further, all research in the areas of behavioral and social sciences are, at their most basic level, an attempt to understand and decipher human behavior (Onwuegbuzie and Leech, 2005). While quantitative research might lose some of the subtlety not present in numerical data, qualitative research methods place emphasis on context, meaning, and subjectivity (Day, Sammons, and Gu, 2008). Instead of focusing on behaviors and understanding, quantitative research methods are hypothesis based and focused on determining the scope and the numerical evidence (Lim, 2024). Where qualitative methods are investigating nuanced human situations that lend themselves to emotional attachment, quantitative methods are taking a numerical approach that allows the researcher to stay outside the research (Day, Sammons, and Gu, 2008).

Qualitative methods are a means of gathering scientific data in conjunction with the nuance of life and the human experience (Tobin, 2024). Qualitative methods create understanding around behavioral phenomena with allowance for nuance while placing valuing on the human experience and perspective (Onwuegbuzie and Leech, 2005). Data for qualitative research is gathered using interviews, life stories, and observations and is analyzed by theme and content (Tobin, 2024). The major strengths of this method include the ability to adapt and be flexible as research progresses, the depth of insights and authenticity gathered, and the academic integrity and methodological rigor present in the process (Lim, 2024a). The resulting scientific data that is built from qualitative research contributes powerfully to uncovering complex social phenomena and providing new depth of understanding (Onwuegbuzie and Leech, 2005). It strives to maintain a balance between science and humanity, valuing both detailed data collection and systematic study while maintaining a comprehensive view of the complexities of the human experience and emotion (Lim, 2024a). Subjectivity along with contextual relevance provide a more comprehensive view of the research question (Tobin, 2024). Thus, qualitative methods are able to blend the subjective and empirical seamlessly together and allow the subjects to be observed in their natural environment while refusing to reduce them to mere numerical values (Lim, 2024b). Another strength of qualitative research methods is their ability to generate hypotheses and serve exploratory themes and objectives (Onwuegbuzie and Leech, 2005).

A weakness of qualitative research is that due to smaller, more specific sample groups, there are potential limitations to the relevancy of the findings on the broader population (Mohajan, 2020). Further, the intense nature of data gathering through in-depth interviews and contact with

people can create the need for substantial investment in the way of time, financial commitment, and resources (Tobin, 2024). Another challenge with qualitative research is consistency in analyzation, interpreting data correctly and consistently is crucial to the research as misinterpretation could skew the results (Mohajan, 2020). Perhaps the biggest weakness in qualitative research is its interpretive nature (Neumann, 1987). The subjective nature of qualitative research opens possibilities for the researchers own ideology to unintentionally color their interpretation of the research (Mohajan, 2020). Rigorous reflexivity, transparency, and external feedback are essential to keep bias in check (Tobin, 2024).

Like qualitative research, the goals of quantitative research are understanding social phenomena and finding actionable ways to make decisions and improvements, however, the quantitative research method focuses not on exploring the nuance of humanity and behaviors, but on evidence based conclusions through the use of measurable variables, objective analysis, and quantifiable data (Onwuegbuzie and Leech, 2005). Rooted in hypothesis testing, quantitative methods center on numerical data and statistical analysis (Lim, 2024b). The data is collected using experiments, tests, and surveys (Thoma, et al, 2018). This data lends itself well to both numerical analysis and standardization (Neumann, 1987). This is important because it ensures consistency in data collection and uniformity in the surveys and experiments (Onwuegbuzie and Leech, 2005). The data itself is often analyzed with statistical software, mathematical interpretation models, or algorithms (Lim, 2024b). These tools are efficient for the assessment of datasets of any size and provide structure, objectivity, and impartiality (Onwuegbuzie and Leech, 2005). This both lowers the potential for bias and increases equitability of the research results (Mohajan, 2020). Objectivity is paramount in preserving the credibility of research. In addition to reducing bias, another strength of quantitative methods is that they are systematic. Because of this, the experiment could be repeated identically and the results tested and tweaked against previous discoveries, making it easier to leverage and deepen study (Thoma, et al, 2018). Finally, beyond the proving or disproving of objective hypotheses, quantitative research allows for cause and effect relationships to be discovered among variables (Lim, 2024b).

Weaknesses of quantitative research include limited contextual understanding, restricted complexity, and limited flexibility (Lim, 2024b). Limited contextual understanding can result in missing essential nuances that have the potential to affect the depth and interpretation of the findings (Day, Sammons, and Gu, 2008). Limited flexibility is a result of having set parameters that once data collection has begun, do not allow for change or manipulation even as nuance comes up in the research (Lim, 2024b).

Though they are very different, qualitative and quantitative methods are not in opposition, but rather compliment one another in obtaining thorough research (Lim, 2024a). This idea can be explored further through the study of mixed methodology as a research design and method of data acquisition. While it seems important to touch on this as a valid and significant methodology, this paper will only provide a brief overview of mixed methodology. Mixed methods has been a research practice since the 1950s, but was not used formally until the later 1980s (McKim, 2017). Mixed methodology continues to increase in popularity as an answer to the growing complexity in research design methods that provides both logistical and practical application in the field of study (Doyle, Brady, and Byrne, 2016). When a purely qualitative or purely quantitative study falls short, mixed methods is a justifiable means of answering the research question (McKim, 2017). For example, open ended questions, while not numerically quantifiable, may enrich the quantitative analysis, and prevent the potential oversimplification of the complex human phenomena and relationship (Neumann, 1987). The demand for mixed methodology has increased significantly because it allows the researcher to gather, analyze, and interpret both qualitative and quantitative data, integrating both approaches and thus benefiting from the strengths of each (Doyle, Brady, and Byrne, 2016). An advantage of using mixed methods is that quantitative and qualitative methods can be mutually corroborated to support the research results from a more thorough perspective (Doyle, Brady, and Byrne, 2016). Current study suggests that mixed methods engages in rigorous strategies, has a newer history, and provides depth of meaning to the phenomenon that qualitative or quantitative methods alone could not provide (McKim, 2017). Though this methodology has many strengths, it is important to consider the added implications of using mixed methods instead of choosing either a qualitative or quantitative approach. Mixed methods typically requires additional time, an increase in funding, and a higher level of required manpower (McKim, 2017).

Ethics

When doing research that involves participants, ethics come into play. From the very outset of the concept through to the impact of the research, an intentional process of ethical reasoning is mandatory for the protection of all involved (Lindkvist, Koppel, and Tinghög, 2024). The ethics of the research process center around beneficence, doing positive good, and non-malfeasance, doing no harm (Beauchamp and Childress, 2001). The research practitioner needs to apply ethical reasoning, undertaking on behalf of the participants what is good versus what is harmful, and proceed with purposeful aim to guard the rights of participants (Poulton, 2023). These rights include being accepted and autonomous, and having privacy and protection (Neumann, 1987). Actions the researcher can take to maintain ethical research include obtaining informed consent, providing post-research debriefing, ensuring confidentiality, and ensuring the security

of the information gathered during the research process (Darra, 2008). It is the responsibility of the researcher to anticipate the risks that are presented by the research process and to take these steps to protect both the researcher and the participants in the study and to maintain virtuous character, navigating ethical quandaries with appropriate action and, when necessary, responsible solutions (Poulton, 2023). Ethical consideration also requires guarding against research misconduct, including fabrication, falsification, plagiarism, misrepresentation of collaborative efforts, or dealing with allegations of misconduct inappropriately (Darra, 2008). An ethically sound research procedure will be driven by contributions to knowledge, will be methodologically sound, will have objectives that outweigh the inherent risk, will be respectful of embedded hazards, will be supervised appropriately, will be preceded by risk assessment, and will have procedures in place to deal with hazards that might arise (Lindkvist, Koppel, and Tinghög 2024, Poulton 2023). Informed consent is paramount in ethical research. To be valid, the consent must be informed, voluntary, and competent. Participants should receive such thorough information that all questions have been addressed (Poulton 2023, Darra, 2008).

Insider Research

Insider research can be defined as any research that involves the researcher doing research on, with, or for the benefit of a person or group that they are actively involved in or connected with (Bulk and Collins, 2023). An insider researcher plays a dual role in their environment, simultaneously studying and personally participating in the community (Liu and Burnett, 2022). This provides them with a unique, insider point of view (Darra, 2008). Often when practitioners become researchers, this situation exists, and must be handled ethically so that professionalism can be maintained (Poulton, 2023). A major benefit of insider research is that the researcher is already known and trusted by the community and thus has the privilege of gathering a more complete and intimate data set; however, the previously established relationships and entwinement in the community also present the potential for bias to interfere with the objectivity of the research results (Liu and Burnett, 2022). In guarding against bias, it is wise to identify and document your own positionality both as a precursor to research and in an ongoing manner as the research progresses, with awareness on your relationship to your research and your participants (Lindkvist, Koppel, and Tinghög, 2024). This requires insider researchers to adhere to externally driven ethical principles and to stay alert to ethical dilemmas, continuously choosing integrity (Poulton, 2023).

Conclusion

This paper has looked at how research should be properly conducted. In my next module I will be actively performing a work based research project where I will be applying all that I have

learned in the process of writing this assignment to voice practitioner research. The ground work I have laid here will aid in my ability to gather and asses voice data, to understand research paradigms, to see my research through the lens of research paradigms, and to access and apply a variety of data acquisition and interpretation methods. Instinctually, I now understand that I lean towards qualitative research methods. Because of this research project, however, I have been challenged to consider the value of approaching my research project using both qualitative and quantitative methods to provide a more thorough acquisition of data and research results. Perhaps most important, is what I have learned about the ethics around the research project and the ramifications of insider research. As a teacher, I want to protect my voice students by doing research that enhances their education and is filled with integrity. I have gained understanding on how to proceed with care towards their best interest, while also seeing ways to make sure I am not putting myself at risk. I also learned a great deal about insider research and its implications. I had not the considered the implications of my own bias around wanting students to be successful or improving their musical education environment before this project. I am excited to see how this paper impacts my work moving forward.

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