

Module 2: BMPF7005

Undertaking Research in the Workplace

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Evaluation of Research Methodologies, Approaches, and Designs

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Critically evaluate a range of methodological approaches, research designs, and research methods appropriate to gather data from complex work-based settings, with due consideration to research ethics and issues of insider research.

Introduction

Vocal pedagogy is an area of study that has grown vastly in research over the past decade. As a vocal coach in the United States, I have witnessed the shift in the vocal pedagogy community at large and their teaching practices. What once used to be taught by sensation and subjectivity as I was growing up in the early 2000s is now shifting towards science and objectivity. For example, Sataloff (2017) mentions that Pier Francesco Tosi's book, issued in 1757, *Opinioni de' cantori antichi e moderni*, contained singing advice that was largely concerned with embellishments rather than technical matters. He goes on to say that Tosi mentions head and chest registers without any explanation on how to facilitate them or what they are in an anatomical sense, which was common back then (Sataloff, 2017). There is a space for both sensation and subjectivity and science and objectivity to coexist without veering too far one way or another. The same is true with research paradigms. This paper seeks to discuss various research paradigms and all their facets. I will also delve into the two main methodological approaches, qualitative and quantitative, and discuss positivism, constructivism, pragmatism, phenomenology, mixed methods, and more. After discussing each of these concepts, I will delve into a further explanation as to which is/are most beneficial for my practice as a voice pedagogy professional. As a licensed therapist and current trauma-informed voice practitioner, this will all be through the lens of my topic of interest: the effects of trauma on the voice.

Paradigm

Most scholars and researchers such as Gray (2014), Kivunja and Kuyini (2017), and Crotty (2015) are all in agreeance that "paradigm" is a vague term. Gray (2014) demonstrates that one of the problems is the large number of theoretical perspectives and methodologies we have now; however, the bigger issue is that the nomenclature and explanations applied to them

are often inconsistent and/or contradictory, which can be confusing. Kivunja and Kuyini (2017) state that “paradigm” was once used to mean a philosophical way of thinking. Nonetheless, in educational research, the word “paradigm” is used to describe a person’s “worldview,” meaning the lens through which the researcher views and interprets data (Kivunja & Kuyini, 2017). The way a person views the world (as it is or the world they wish for) affects the way they act within that world, and these paradigms guide them through their studies. Crotty (2015) suggests an interconnection exists between the position a researcher adopts, the methodologies and methods they use, and the researcher’s view of the epistemology. For the research process, this means that whether consciously or not, biases are present. If someone views the world of their research (data and all) through a particular paradigm, their methodologies will reflect that paradigm, which can also affect the data interpretation. This is not a bad thing, per se; however, it is something to be mindful of when conducting research.

Ontology

Ontology is referred to as the study or theory of reality and being (Gray, 2014). To have an ontology is to have a process of representing items and knowledge in a way that distinguishes the relationships and classifications of concepts within a specific field (Jepsen, 2009). For example, ontology asks, “What is reality?” as compared to epistemology asking, “How can I know reality?” (Patel, 2015). Gray (2014) compares the two by saying that while ontology covers the understanding of *what is*, epistemology seeks to clarify *what it means to know*. A researcher adopts an ontology or a set of assumptions about reality’s nature, which is comparable to Jepsen’s (2009) definition. Ontology is not fixed; rather, it can evolve over time to meet new requirements. A constructivist’s ontology of my area of interest (trauma’s effect on the voice) might be that each experience is different, so there are multiple truths, depending on the subject’s viewpoint. A positivist’s ontology of that same subject might be the opposite – that each person experienced trauma in the same way, thus having the same effects on the voice.

The constructivist and positivist views will be discussed further in detail later in this paper; nonetheless, one's ontology is important as it will determine their approach.

Epistemology

Epistemology is the study of knowledge and a branch of philosophy that examines the standards for determining what constitutes (and does not constitute) valid knowledge (Gray, 2014). As a researcher, your epistemology should be clear and communicated before you begin the research so that the assumptions that could underpin the research can be understood by the readers; it might also need to be understood by the subjects of the research as well (Walliman, 2009). Seeing things from an epistemological perspective is important because it can help point out potential flaws in a research design, and can help an individual recognize which designs will work or not, depending on the given set of objectives (Gray, 2014). One's ontology will inform their epistemology. Under the umbrella of epistemology are the ideas of objectivism, subjectivism, and constructivism (Gray, 2014). These ideas all view reality differently.

Objectivism is the idea that reality is objective, meaning it is considered "unbiased" (or at least attempting to be unbiased), not influenced by other viewpoints, and it exists in the object regardless of the subject's knowledge (Persson, 2005). Conversely, subjectivism views that knowledge exists within the subject and that it is created by an individual's understanding and perception of reality (Persson, 2005). Constructivism is based on the idea that there is no such thing as one sole reality of truth, and reality must be interpreted. Because of this, constructivists are more likely to use qualitative methods to achieve the realities they desire (Patel, 2015).

Where objectivism says, "There is meaning in the world.", subjectivism would say, "We impose meaning on the world." Constructivism would argue that meaning comes from our interactions with the world (Persson, 2005). We have seen a blend of these epistemologies in voice pedagogy research. Those who teach solely based on anatomy and function likely lean more toward objectivism, whereas those who teach based on feeling/sensation and imagery might prefer subjectivism. There is a place for a blend of epistemologies. As it relates to my topic of

interest in trauma's effects on the voice, I think I would prefer the epistemology of constructivism. While there are objective truths in this area such as what stress can do to one's body (raise cortisol levels, increase heart rate, etc.), trauma is subjective. It is a personal experience and varies from person to person. Additionally, there are multiple types of traumas. Trauma is complex; therefore, it should be treated as such. There cannot be one treatment or approach to people's vast, varied experiences. More information on the relationship between epistemology, theoretical perspectives, methodology, and research methods can be found in *Figure 1.1* of Appendix A (Gray, 2014).

Research Methodologies

When researching a topic, one should determine what methodological approach they would like to use. Perhaps before choosing a methodological approach, the researcher should clarify their ontology (Gray, 2014). This can be done through considering their own experiences within their field of work. The two main methodological approaches within the social science field are qualitative and quantitative.

Qualitative Research

Those who prefer or adhere to subjectivist and constructivist epistemologies tend to choose qualitative research. Qualitative research designs revolve around answering "Why?". The data collected is not numerical; so, the data can be an observation, symbol, or word. The data is meant to be observed and interpreted (Mcleod, 2023). Types of qualitative research methods include the following: one-on-one interviews, focus groups, ethnographic research, case studies, and record-keeping (Vishal, 2012). I think these methods could be beneficial for my area of interest, specifically interviews and case studies. This is because it allows us to capture the specific experiences of the person and how their trauma affected them, both short-term and long-term. We would be able to dive deeper into people's personal stories, where they might not feel comfortable doing so on a survey. Many people, myself included, prefer to discuss such matters one-on-one and face-to-face, rather than writing it all out. Some

things are lost in translation through writing. An example of qualitative methods in use similar to my topic of interest is the study done by Anketell et al. (2010). These researchers chose to use a qualitative methodology to explore the voices of three men with chronic posttraumatic stress disorder (PTSD). In this study, the researchers provided a comprehensive analysis of the participants' lived experiences. They gathered information via one-on-one interviews, which was noted as consistent with qualitative work. This is because phenomena only need to appear once to be part of an analytic map (Anketell et al., 2010). However, it is worth noting that this study also noted that this was performed after a quantitative study to enhance the understanding gained from those previous findings. A positive aspect of qualitative research is that it is intimate. This design allows you to get further detail from subjects because they are one-on-one with the researcher, rather than filling out a survey, which can feel impersonal. A negative aspect of this research design is the small sample size. Choosing one-on-one interviews is already a choice for the study to take more time; however, if the sample size increases, that will take more time and could eventually become impersonal as well. Anketell et al. (2010) also mentioned that three is a very practical number of interviews in qualitative research as it allows for in-depth communication with each case but also a detailed examination of similarities, differences, convergence, and divergence. However, one may argue that such a small sample size may deem the research as not representative of the whole population.

Quantitative Research

Those who prefer objectivist epistemologies tend to choose quantitative research. Quantitative research designs focus on answering, "How many" or "How much?" The results in these designs are numerical or statistical and are meant to be measured and tested (McLeod, 2023). Those who adhere to positivism also tend to choose quantitative research. Positivism is the idea that there is one singular reality and that this reality can be measured and known. Therefore, people who adopt positivism are more likely to use quantitative research methods to measure their perceived reality (Patel, 2015). Types of quantitative research methods include

surveys, experiments, and statistical analyses (Mcleod, 2023). As it applies to my area of interest, one could conduct a survey to gather data. An example of quantitative research in use in my area of interest is a study done by Monti et al. (2016). They sought out to seek the relationship between one's vocal characteristics and their attachment and trauma history, specifically in singers. This was divided into two separate studies. In the first, they analyzed 25 singers between the ages of 18 and 35 via an attachment history questionnaire (ECR-R) and the Singing Voice Handicap Index (VHI). In the second study, they analyzed 26 singers between the ages of 19 and 33 via the attachment history questionnaire, Childhood Trauma Questionnaire, State and Trait Anxiety Inventory, and Test of Self-Conscious Affect. In both studies, their voice range profile, perturbation, and spectrogram measures were recorded and reviewed (Monti et al., 2016). Clearly, there were multiple methods used in these studies; however, they were all qualitative. A pro to using quantitative research methodologies here is they had a larger sample size that varied more in age range compared to the previously mentioned qualitative study by Anketell et al. (2010). Additionally, these results are more easily interpreted and comparable, and the anonymity in surveys (compared to interviews) can encourage further sharing in some subjects. With qualitative methods such as interviews, it is very difficult to compare personal experiences as they are nuanced. A con to using quantitative methodologies is that it does not take into account the specific traumas and the loss of one-on-one connection with the subjects. These studies make it easier for confounding variables to appear.

Phenomenology

Phenomenology is a philosophy that focuses on people's conscious experiences, such as judgments, perceptions, and emotions. It also focuses on embodiment in people. This means rather than focusing on reactions to experiences, phenomenologists want to know what the experience was like (Connelly, 2010). This is a great method to use for people who work with others, as it considers the individual and their lived experiences. The downside to this method is

that sample sizes must be small to due its intimate nature; however, on the other hand, phenomenologist researchers are able to retrieve data from these experiences that they could not get from a survey. When conducting a study from a phenomenology lens, data will be retrieved via interviews with people. One can also collect data by observations and examinations of artifacts (Connelly, 2010). There are two subcategories of phenomenology: descriptive and interpretive (otherwise known as hermeneutics). The main difference between these two types is how they view and handle biases (Paterson & Higgs, 2005). When conducting qualitative research, one has to be aware of any presuppositions or biases they may be bringing to the study. Those who align with descriptive phenomenology try to separate their presuppositions to prevent them from interfering with the study. Those who adopt interpretive phenomenology do not believe this is possible; they believe your presuppositions and biases are a part of you, and all you can do is acknowledge them and their possible effects on the study (Paterson & Higgs, 2005). Regardless of how one aligns, researchers should be clear about which approach they used and how that is relevant to the purpose of the study. An example of a study done through a phenomenological framework related to my field of study would be one done by Lee (2009). This study does not look at people experiencing trauma and the voice; however, Lee studied music therapists after working with patients who had experienced trauma. In this study, Lee focused on Vicarious Traumatization (VT), Compassion Fatigue (CF), and Burnout. Lee (2009) states that this study was conducted within the phenomenological framework with added musical improvisation. The subjects were interviewed through the open-ended interview guide, and data was analyzed based on The Modification of the Stevick-Colaizzi-Keen Method of Analysis of Phenomenological Data (Lee, 2009). In the Stevick-Colaizzi-Keen Method of Analysis of Phenomenological Data, data analysis begins as soon as the first set of data becomes available; any data after that is obtained through the researcher's experience (Aguas, 2022). Most phenomenological research I found was for

healthcare workers and patients. It would be difficult to conduct phenomenological research in the area of voice pedagogy unless we are looking from the perspective of the teacher.

Pragmatism

Pragmatism is a paradigm that welcomes the plurality of methods. According to Kaushik and Walsh (2019), pragmatism operates under the doctrine that human actions can not be separated from past experiences and the beliefs that were formed as a result of those experiences. Therefore, an individual's thoughts are linked to their actions (Kaushik & Walsh, 2019). Pragmatists believe that reality is not invariable and it can change at every turn of events. Therefore, the world is also not invariable because it can also be changed through actions (Kaushik & Walsh, 2019). I like that pragmatism leaves space for more nuance. When studying people (and especially their voices), there is room for multiple methods when you observe their voices physically and audibly. An example of a study conducted through a pragmatist lens is the one done by Werner et al. (2015). In this study, the researchers investigated the effects of music therapy in age-related depression in nursing home residents. The researcher's goal was to explore the effect of interactive group music therapy and compare it to the effects of recreational group singing. They had 117 participants total, and they were split into four groups based on their wards in the home. They assessed their symptoms using the Montgomery-Asberg Depression Rating Scale (Werner et al., 2015). A positive aspect of a pragmatic study is they are conducted in real-life settings and scenarios. They are designed to assess the effectiveness of particular interventions, but in the "real world," as opposed to in a lab and in "prime conditions" (Patsopoulos, 2011). Pragmatism accounts for issues that might occur rather than having to guess what might come up. Another pro for pragmatic studies is that they induce results that can be generalized and applied to other settings (Patsopoulos, 2011). A con to pragmatism is that the impediments that come up in research might be specific to that particular setting, and not to all settings of the same type.

Mixed Methods

Although historically it has been difficult for researchers to come to a consensus on a solid definition for mixed methods research, it can be defined as the collection or analysis of both quantitative and qualitative data within one study (Gray, 2014). Greene et al. (1989) reviewed 57 evaluation studies in order to identify five reasons why one would use a combination of methods. These five purposes include triangulation, complementarity, development, initiation, and expansion. For definitions and further information, see *Table 3.1* in Appendix C (Gray, 2014). An example of a research design that used a mixed methods approach is one done by Moss et al. (2017). In this study, researchers investigated the health benefits of singing in a choir. They retrieved data by having subjects take an online questionnaire that contained demographic information, a total of 28 quantitative statements, and 2 qualitative questions (Moss et al., 2017). This was a successful study that showed a strong correlation between singing in a choir and people's health; however, it is important to note that the authors mentioned a potential bias in this study: the findings were all self-reported by people who were already in the choir. A benefit of using mixed methods research is that it allows researchers to generalize from a sample to a whole population; this allows them to better understand the topic at hand (Gray, 2014). Where qualitative research can analyze concrete cases and observe behavior and expressions, quantitative research allows one to make generalizations and observe relationships between variables (Flick, 2023). When using multiple methods, the results endorse one another, which reinforces the validity of the data (Gray, 2014). While it may be tempting to assume a mixed methods approach is always a benefit, that is not the case. A con to using mixed methods for your research design is that researchers may misinterpret or misconstrue similarities and differences when data is collected via methods that are not compatible. Just because results are coming from both quantitative and qualitative methods does not guarantee that the results are also valid (Gray, 2014). Additionally, Gray (2014) warns that if one is undertaking a dissertation as part of a Masters degree, a mixed methods design might be difficult. This is because there is not a lot of time to complete the

dissertation and using a mixed methods approach can take longer, thus adding to one's time problems.

Ethics in Research

Ethical issues that relate to research practice are normative ethics with a deontological perspective. Normative ethics states that ethical principles should never waver or be compromised, and deontological ethics focuses on the rights of research participants such as privacy (Gray, 2014). A researcher's basic requirement is to conduct research in a responsible manner. There are a wide range of ethical issues that can arise in research, including informed consent, data privacy, potential harm of participants, and the responsible use of the findings that are gathered (Ng, 2006). Good research is balanced, thoroughly planned, well-designed, and ethically approved (Ng, 2006). While this sounds easy in theory, not all decisions can be clear-cut in practice (Walliman, 2009). Ng (2006) states that in order to achieve this, one must develop a protocol and adhere to it, and it must be agreed to by all contributors and collaborators. For example, if you are working with human participants in your study, you will likely have to receive approval from your university or affiliated organization (Walliman, 2009). Gray (2014) says the largest ethical issues that arise in research are: informed consent, data access and ownership, researcher mental health, and advice. You can see this in chart form in *Figure 2.1* of Appendix B. Informed consent is the idea of receiving consent from the subjects and ensuring they know exactly what they are agreeing to. Regarding data access and ownership, an important note to consider is who will have access to the data retrieved and who owns said data (Gray, 2014). Researcher's mental health considers how this data and the process of collecting it might affect the researcher. This data may require debriefing and counseling in some instances. Lastly, Gray (2014) urges researchers to consider who they have as a mentor and/or counselor on ethical issues and accountability if/when issues arise during the study. Another important issue of ethics in research is plagiarism. Plagiarism is when one copies another's work and allows it to be assumed as their own (Walliman, 2009). It is important

that when you gather research from outside sources, you credit those sources properly. You can credit them properly through citation, which can be defined as a reference to a source of information or quotation given in a body of text (Walliman, 2009). If someone chooses to stay fixed on one ontology, this can affect the interpretations of their data. For example, researchers could experience confirmation bias. Confirmation bias is when information is searched for, viewed, and analyzed in such a way that it prevents the possibility that the initial hypothesis could possibly be rejected (Pohl, 2012). Simply put, you get the outcomes you look (and wish) for. It is crucial that the researchers are honest about the data retrieved and do not become selective with what data they use and present. Silently rejecting or ignoring results that happen to be opposite of one's beliefs is considered a breach of integrity (Walliman, 2009). This is also something to keep in mind in interviews, where things can get lost in translation. Costley et al. (2013) mention that an ethical issue with conducting interviews as your sole method of gathering data is that researchers can engage in inappropriate power dynamics while interviewing subjects. This includes behaviors such as controlling the interview through one-directional questioning and dialogue, following a hidden agenda, or manipulating the subjects' answers (Costley et al., 2013).

Reflection

My area of interest is trauma and its effects on the voice. I am curious to know what happens biologically to a person's voice after experiencing trauma. Do they develop muscle tension in the throat due to anxiety? Do they/their voices change aesthetically, biologically, or both? My ontological beliefs thus far are that while the experience of trauma itself varies from person to person, there is scientific data to show what happens to the voice (both physically and audibly). This data could possibly be proven through laryngoscopy results. This viewpoint would fall more in line with objectivism; however, I also believe there is room for nuance. One person could experience trauma and not have any kind of voice change. One may argue it depends on the type of trauma or severity of that trauma, as there are many confounding variables. These

variables will differ from person to person in each case, with no subject exactly alike in a research design. This adheres to the constructivist ontology, where it all might depend on the experience of the individual. For my topic of interest of trauma and the voice, I find myself drawn to a pragmatist approach, seeking more quantitative methods than qualitative. This is due to the amount of research done in the voice pedagogy field that is done through quantitative methods such as surveys, laryngoscopies, etc. However, because pragmatism embraces the plurality of methods, I can use a blend of quantitative and qualitative. Through quantitative methods, we can focus on the science behind trauma and how it affects the body as well as view what is happening biologically through laryngoscopic videos. Through qualitative methods, we can delve deeper into the personal experiences of the subject via one-on-one interviews and case studies. This way, researchers will be able to hear what subjects experienced from their point of view.

Conclusion

I plan to conduct a study to examine how trauma affects the overall voice, both in terms of physical anatomy and aesthetic sound. I intend to gather this information through multiple sources. For the trauma intake, I could use similar tests to those of Monti et al. (2016) such as the attachment history questionnaire and Childhood Trauma Questionnaire. For the voice portion, I could view laryngoscopic videos of the subjects and conduct one-on-one interviews to hear the subject's experiences from them personally.

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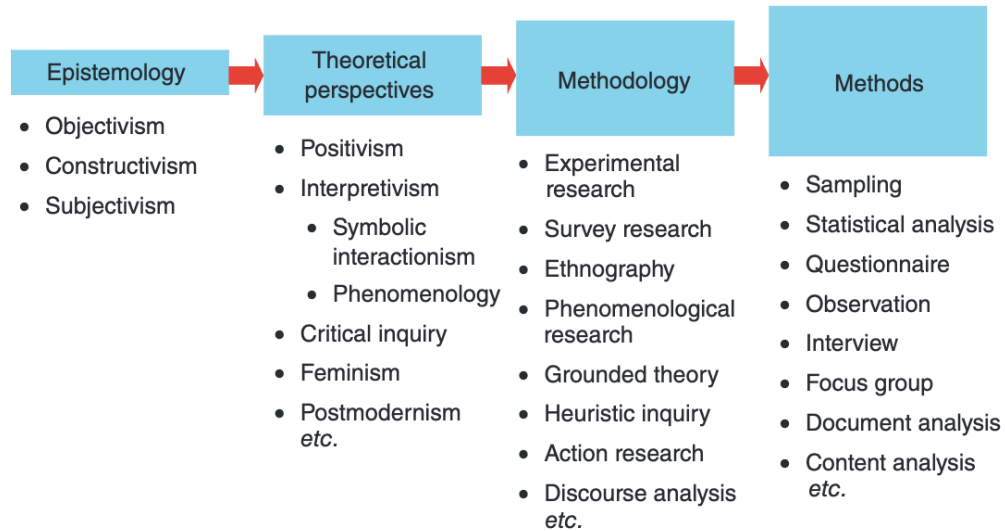
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Appendix A*Figure 1.1*

Relationship between epistemology, theoretical perspectives, methodology, and research methods



Source: Gray (2014)

Appendix B*Figure 2.1*

Checklist of Ethical Issues

Ethical Issue	Description
Informed Consent	What kind of formal consent is necessary and how will it be obtained?
Data access and ownership	Who will have access to the data and who owns it? Make sure that is specified in any research contract.
Researcher mental health	How will the researcher be affected by conducting the research? What will the researcher see or hear that may require debriefing or counselling?
Advice	Who will the researcher use as a confidante or counsellor on issues of ethics during the research?

Source: Gray (2014)

Appendix C*Figure 3.1*

Purposes of mixed methods evaluation design

NAME	PURPOSE	RATIONALE
Triangulation	Seeks convergence, corroboration, and correspondence of results of different methods.	To increase the validity of constructs by counteracting or maximizing the heterogeneity of irrelevant sources of variances attributable to inherent method bias, inquirer bias, or biases in inquiry context.
Complementarity	Seeks elaboration, enhancement, illustration, and clarification of the results of one method with the results of another method.	To increase the meaningfulness and validity of constructs by capitalizing on inherent method strengths and counteracting inherent method biases.
Development	Seeks to use the results of	To increase the validity of

	one method to help or inform the other method.	constructs and inquiry results by capitalizing on inherent method strengths.
Initiation	Seeks the discovery of paradox and contradiction, new perspectives, the recasting of questions, or the results from one method with questions or results from the other method.	To increase the breadth and depth of inquiry results and interpretations by analyzing them from the different perspectives of different methods and paradigms.
Expansion	Seeks to extend the breadth and range of inquiry by using different methods from different inquiry components.	To increase the scope of inquiry by selecting the methods most appropriate for multiple inquiry components.

Source: Gray (2014)