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

by

Martine Wengrow
2319332

Module 2
BMPF7323D

University of Wales, Trinity Saint David
January 2024

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Module 2

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Word Count: 4121

Introduction

This assignment aims to investigate various research philosophies and methodological approaches relevant to the voice practitioner-researcher. Before embarking upon the scholarly process of research, what Boyer (1990) refers to as "the scholarship of discovery" (Boyer, 1990, p.17), the researcher must be aware of their personal ontological, epistemological and axiological positions as bases from which to deepen understanding of their own and others' research assumptions (Crotty, 1998). This paper aims to explore key concepts within these philosophical domains, as well as provide an overview and critical evaluation of research paradigms, methodologies, research designs, and methods. I will subsequently detail the issues of ethics and implications of insider research (IR) within work-based research settings.

As a professional musical theatre (MT) voice educator, and beginner in the research field, I intend to build a robust and rigorous foundation of understanding of key issues facing a voice practitioner-researcher, to further inform and expand upon my ideas and options moving into the research space.

Philosophical Concepts of Research

Research can be defined as the systematic and detailed "quest for knowledge" in a particular field of enquiry (Garner, Wagner & Kawulich, 2009, p.64), or the pursuit of new information or insight about a question or problem (Bell & Waters, 2018). A person's philosophical positions regarding the nature of reality, what constitutes truth and knowledge, and what they deem valuable (their ontological, epistemological, and axiological stances respectively), will have a direct influence on all facets of their approach to research: the research question itself, their choice of methodology and research design, and the analysis and interpretation of data (Crotty, 1998; Creswell, 2014). Thus, a thorough interrogation of these assumptions is essential when making research decisions, in maintaining robustness

and credibility of any findings produced (Easterby-Smith, Thorpe & Jackson, 2012; Chilisa & Kawulich, 2012).

Ontology

Easterby-Smith, Thorpe and Jackson (2012) distinguish a spectrum between the two predominant dichotomous ontological positions: Realism and Relativism. A Realist perspective posits that reality is universal and objective, existing exclusive of human consciousness and experience. A Relativist perspective considers that reality is subjective, a construction of human consciousness and therefore, multiple realities are possible (Guba & Lincoln, 2012).

My own ontological stance aligns mainly with the Realist perspective in that I hold an objective view of physical laws and structures, though I also acknowledge subjectivity must be considered in how the independently existing world is perceived and understood. This seemingly contradictory standpoint is mirrored in Putnam (1987) who proposes it is possible to hold both stances compatibly, with Merlo and Pravato more recently terming this coherently realist-relativist view “Subjectivism” (Merlo & Pravato, 2021).

My Realist inclination holds that certain phenomena exist independent of human thought, for example, the material, physiological mechanisms of the human voice. I am drawn to scientifically based studies emphasising objective findings and gravitate to utilising the resulting strategies of such studies as a seemingly efficient and universally generalisable approach to teaching technique. The Estill Voice Training Method (1988) is one such approach that holds with the realist-relativist stance, centring pedagogy around scientific research of voice physiology, whilst acknowledging the application of these elements toward artistic communication as subjective (Estill, 2025).

Epistemology

Epistemological questions, closely linked with ontological viewpoints, are concerned with the nature of knowing: what it is to know, how we acquire and define knowledge, and the validity and communicability of such knowledge (Hitchcock & Hughes, 1995; Gray 2004).

An Objectivist epistemology, aligned with a Realist ontology, holds that an objective reality exists external to the human mind, and thus research centres around discovering these externally verifiable truths (Henn, Weinstein & Foard, 2006). I resonate with these views and

consider that it is through this lens that empirical data from laryngoscopes, particularly the findings of Estill (1988), were able to be systemised and widely disseminated as a reliable and effective contemporary commercial music (CCM) pedagogical approach (Fantini et al., 2015).

The Constructionist epistemology rejects this view, instead positing that reality and truth is constructed within the individual mind, with meaning arising from our unique engagement, interactions, and contextual understandings of the world around us (Crotty, 1998; Gray, 2004).

The Subjectivist stance, a third epistemological view also aligning with the Relativist ontology, posits that whilst reality exists, it is only through an individual's interpretation of their world that meaning is created, and that meaning serves the individual's purposes and understanding (Crotty, 1998). Rather than meaning arising from an interplay with an object (the Constructionist stance), all meaning is imposed upon the object by the individual without the influence of any interplay (Crotty, 1998).

In my area of interest, Constructionist and Subjectivist philosophies can be observed in how CCM timbral qualities of the voice have historically been researched, defined, assessed and taught. Before the invention of the spectrograph, timbral definition had often been based upon how it was perceived (felt, "placed" or heard) by researcher or listener, and by the singer's experience of the sound (Schutte & Miller, 1993; Bozeman, 2013); processes which have likely contributed to today's multiple and varied approaches to CCM pedagogy.

Axiology

Axiology refers to what someone believes is valuable and ethically "good", another consideration when interrogating assumptions and bias underpinning the research process (Biedenbach & Jacobsson, 2016). A person's axiological views, along with their ontological and epistemological views, might contextualise the undertaking of research within a broader world understanding as purposeful and worthwhile (Cohen, 2017), also potentially impacting ethical choices pertaining to their methodological approach, methods and interpretation of data (Chilisa & Kawulich, 2012).

This raises interesting questions surrounding how strictly a researcher can hold to their ontological and epistemological views throughout the research process, especially in the field of voice research where a researcher might often be a practitioner (an IR). For

example, whereas a Realist/Objectivist stance would emphasise the total neutrality of researcher values throughout the research process, a person choosing to undertake research inherently suggests a vested interest in the subject, thus it follows that elements of Relativist/Subjectivist stance cannot be extricated from the process (Biedenbach & Jacobsson, 2016). Contrary to my Objectivist alignment in service of mitigating personal bias and validity of conclusions, Denzin and Lincoln (2020) suggest that the subjectivity of the researcher in certain research settings is not only relevant, but integral to adding robustness and rigour to the process and outcome. I value practicality highly, and whilst my natural inclination leans toward enquiry based in objectivity, I would like to expand my perspective to regard subjectivity in interpretation more favourably.

Paradigms

A researcher's ontology, epistemology and axiology provide a lens through which research projects are conceptualised, planned and performed. Together these elements form the basis of a research paradigm; an overarching worldview or a set of assumptions, that provides direction when considering methodological choices and best ethical practice (Henn, Weinstein & Foard, 2006; Mertens, 2023). Inspired by Kettley (2012) who writes that there likely can be no completely unified subjectivist or objectivist paradigm, this paper will focus on four paradigms that have most contributed to my reflection and understanding of contrasting research approaches.

Positivism and Post-positivism

The Positivist paradigm, aligning with the Realist ontology and Objectivist epistemology of absolute truth, dogmatically postulates that the scientific process of experimentation, that is, the proving or disproving of a hypothesis, is the only foundation for generating new truth and knowledge (Chilisa & Kawulich, 2012). Post-positivism, which gained traction in the 1960's, seeks to acknowledge the human element in the scientific process (Crotty, 1998), and change the emphasis from "absolute certainty to probability" (Chilisa & Kawulich, 2012, p.52). Post-positivists believe:

- achieving pure objectivity is challenging
- scientific practice includes external influences, such as any impact of competing theories

- science includes contradictions, such as the requirement of accepting facts that are not born of observable data, but of best explanations
  (Crotty, 1998; Cohen 2017)

Thus facts are fallible and can be changeable or pluralistic (Mackenzie & Knipe, 2006).

This lens could be applied to the current difficulty in finding a universal acoustic definition of "belting". For example, whereas one researcher has spectrographically determined this timbral quality as a peak of energy of a given vowel near the second note harmonic (Miller, 2008), yet another observes similarly identifiable timbral characteristics when a different spectral peak sits near the third note harmonic (Dargin, 2017). Thus, a single spectrographic definition may not be possible. A Post-positivist may believe there is a truth to be found, however we can only ever know it imperfectly (D'Eon, 2020).

Constructivism

A Constructivist paradigm aligns with a Relativist ontology and Subjectivist epistemology. Constructivism emphasises the value of human experience and interaction as the basis upon which reality, a mental construct, is based. Reality (or realities) can be seen as individual, or shared across a community or culture (Guba & Lincoln, 1994). In opposition to a Positivist or Post-positivist research approach, meaning or findings are created as the process continues, generating theories based upon emergent patterns (Mackenzie & Knipe. 2006).

Constructivism seeks to understand "the world as others experience it" (Chilisa & Kawulich, 2012, p.54). The nature of knowledge is contextually dependent and alterable, however can be considered no less true, so much as simply less understood (Guba & Lincoln, 1994). This paradigm values the awareness and engagement of the researcher within the process and aims to interpret participants' understanding of their reality and experiences, rather than empirically verify a preconceived theory as in the Positivist approach (Chilisa & Kawulich, 2012).

With a Constructivist lens, one might approach acoustic voice research in terms of how a singer experiences and perceives efficiency in resonance when asked to perform different voice qualities. For example, this approach has been utilised to develop the concept of "placement" techniques as a sensation guide to achieving desired sounds (see **Glossary** for definition) (Vurma & Ross, 2002).

Pragmatism

The Pragmatic paradigm is not aligned with any single ontological or epistemological philosophy, and offers an alternative and considerably less dichotomous worldview than Positivism or Constructivism (Feilzer, 2010). Pragmatism leaves room for the possibility that reality can be both external to the human mind, as well as a mental construct (Mackenzie & Knipe, 2006). Knowledge is considered contextual, "truth is what works at the time" (Creswell, 2014, p.11) and only holds value if it is practical. Therefore, truth is dynamic and changeable (Denscombe, 2014). Like within Constructivism, Pragmatists seek to inquire rather than prove (Creswell, 2014). Researchers have the freedom to choose any methodology, methods, and analysis procedures according to what is most useful for their inquiry (Feilzer, 2010; Denscombe, 2014).

In my area of interest, Pragmatism may provide a lens for research that seeks to deepen understanding of the distinction between a singer's perception of their intonation as compared to the physical properties of the sound. Sundberg, Lã and Himonides (2013) take this approach in a case study investigating a singer's and listener's perception of communicative expression compared to pitch spectral analysis. The Pragmatic paradigm is appealing for my own research as it supports whatever processes might be fit for purpose, aligning with my realist-relativist stance and value of practicality.

Methodology and Method

Methodology, a term not to be confused with "method", refers to the theoretical framework that directs how research should proceed. Broadly, a methodology encompasses and consolidates a researcher's ontological, epistemological and axiological viewpoints, guiding the choice of which techniques might be employed toward generating data, and contextualising these positions within the discourse relevant to the area of inquiry (Hitchcock & Hughes, 1995; Henn, Weinstein & Foard, 2006).

The term method refers to the specific instruments with which data is collected, analysed and interpreted, chosen deliberately to align with the tenets of the chosen research methodology, research requirements and context (Gray, 2004; Cohen, 2017).

These terms can be seen to be used interchangeably across the literature, causing some confusion (Mackenzie & Knipe, 2006). However, clarifying the distinction between the

overarching research strategy and specific tools employed therein must be considered important in terms of justifying decisions made during the investigation process, as well as maintaining ethical integrity (Henn, Weinstein & Foard, 2006).

My focus for this paper is to explore elements of quantitative methodology suited to my interest in researching CCM acoustic phenomena, along with two qualitative approaches chosen toward building regard for experience-based pedagogical development. A third option, mixed methods methodology, combining techniques from both methodologies, holds interest as I head into designing future research projects, however I wish to develop my understanding of the contributing methodologies as starting point.

Quantitative Methodology, Designs & Methods

Aligning with the Positivist and Post-positivist paradigms, quantitative research inquiries seek numerical data to investigate the relationship between variables (Creswell, 2014; Cohen, 2017). Adopting key elements of the scientific experiment model of research, inquiry is based upon a proposed hypothesis and utilises the deductive process of “theory-then-research” (Henn, Weinstein & Foard 2006, p.134). Through controlled data collection and analysis, numerical evidence is collated to establish a cause-and-effect relationship, proving or disproving the hypothesis (Gray, 2004; Chilisa & Kawulich, 2012).

The strengths of quantitative research include the aim of producing results which are objective, reliable, replicable, and generalisable (Gray, 2004). Toward this end, it is of utmost importance that researcher positionality remains neutral, to best mitigate the risk of biased analysis. Limitations of this approach include the potential for gaining little knowledge about participants’ experiences and possibly limited understanding of the intricacies or deeper nuances of the phenomenon in question (Queirós, Faria & Fernando, 2017).
Today, the preeminent quantitative research paradigm could be considered to be Post-positivism, which acknowledges that human subjectivity can't be completely eradicated from the scientific process (Crotty, 1998). Thus, resultant outcomes have largely shifted from being explained in terms of absolute new truth, to likeliest new truth (Creswell & Creswell, 2018).

Quantitative research designs relevant to my interest in the development of acoustic pedagogy for CCM voice include True Experimental and Quasi-experimental research, and Survey research.

True Experimental and Quasi-Experimental research largely consists of an independent variable (IV) being manipulated by the researcher to observe any effects on a dependent variable (DV) under specific and deliberate conditions (Salkind, 2010). The two designs differ in their sampling methods. True Experimental research requires Probability Sampling (PS), whereby participants are recruited in a random selection from an entire population, then assigned non-systematically to either the control or experimental group (Gray, 2004). The higher the probability that the sample is representative of the studied population means a higher accuracy of being able to generalise findings across this population (Chilisa & Kawulich, 2012). For an MA-level project, this sampling method is likely unviable, as it requires a researcher to have access to an entire population.

Quasi-experiments may use Non-Probability Sampling (NPS) (also known as convenience sampling), whereby rather than being random selection, participants might be recruited who are willing to be involved (Chilisa & Kawulich, 2012). Participants are then allocated to groups non-randomly. This choice might be made when research is undertaken in circumstances where population access is limited, or it is not possible to control every relevant variable (Denscombe, 2010). NPS leans away from the Post-positivist stance toward Constructivism, due to the inherent bias arising from non-random selection, and a subsequent lack of generalisability for any findings (Salkind, 2010).

In my area of interest, a Quasi-experiment may be useful in spectrographically testing the efficacy of new physiological technique in achieving a CCM resonance strategy (see **Glossary** for definition). For an MA-level study, NPS would be the most practical approach due to limitations of time and access to participants. However, the relatively small size sample, even if randomised, would be unlikely to yield statistical significance, thus generalisability of findings would not be viable. Results may offer insight into the development of the technique, however a quantitative survey or qualitative approach would be required to ascertain participant views on how the technique was communicated, or how easy/difficult the technique was to learn in the given timeframe, both of which would likely affect the data.

Quantitative survey research might employ a questionnaire data collection method, whereby closed-ended questions collect numerical data from a sample population, intending to describe a trend or opinion generalisable to the wider population (Creswell & Creswell, 2018). Subsequent statistical analysis provides descriptive information: insight or identification of themes or characteristics about a specific subject. A typically low-cost option, surveys can be a useful first step in obtaining basic overviews about a population which can

then be studied more deeply using either quantitative or qualitative approaches (Gürbüz, 2017). Data reliability however is highly dependent on the structure and wording of the survey, as well as the accuracy of participant responses (Queirós, Faria & Fernando, 2017). Survey designs can also fall under a qualitative banner, utilising more open-ended questions to gain deeper insight into personal opinions, potentially yielding data triangulation options beyond a quantitative survey approach, toward a richer understanding of a phenomenon (Olsen, 2004). This may be a useful complementary option in a mixed methods approach to studying acoustic techniques of tertiary CCM singers.

Qualitative Methodology, Designs & Methods

Qualitative research seeks to explore human behaviour and experience, building understanding of subjective realities, with data collection often taking the form of words to be analysed and interpreted (Chilisa & Kawulich, 2012). Qualitative studies use an inductive approach through which theories are gleaned during or after the process, the findings producing a possible (rather than conclusive) explanation of a phenomenon (Cohen 2017: Creswell & Creswell, 2018).
Aligning with the Constructivist paradigm, value is placed on the researcher's interaction and input throughout the process, such that human phenomena "can only be understood by the researcher sharing their frame of reference" (Cohen, 2017, p.48). Interpretations, therefore, are considered as subjective as the data collected. Thus, the strengths of qualitative research include focussing largely on building depth of understanding about the "why" of a phenomenon within a specific context (Hitchcock & Hughes, 1995), however limitations exist with analysis potentially being time-consuming, findings likely being limited in generalisability, and researcher bias inherently influencing interpretation (Queirós, Faria & Fernando, 2017).

The interdisciplinary approach to qualitative methodology is evolving quickly (Garner, Wagner & Kawulich, 2009). Particularly in the field of voice research, student researchers seem to be required to cross-disciplinary boundaries to find translatable perspectives on approaches perhaps not commonly found in the literature. Two such approaches rooted in social science study include Phenomenology and Hermeneutics.

Phenomenology was founded in reaction to the Psychology field's allegiance to the Positivist viewpoint of Objectivism and can use a range of methods in pursuit of describing and understanding the meaning of a person's experience from their viewpoint (Cohen, 2017). To achieve this, the researcher must find a way of suspending any judgement, by bracketing off

all predisposed ontological assumptions (Chilisa & Kawulich, 2012). Analysis continues to position this information alongside interpretation of others' experience of the same phenomena, aiming to gain insight into any shared experience and contrast this with preexisting assumptions (Denzin & Lincoln, 2000). Though this approach may yield diversity and richness of data, the process will be time-consuming. For an IR like myself, the bracketing off of personal assumptions may be difficult to effectively achieve.

Hermeneutic research, like phenomenology, is also concerned with finding meaning through interpretation of human experience, however focusses purely on the interpretation and analysis of language and written text (Laverty, 2003). A researcher begins with a "forestructure of understanding" (Patterson & Williams, 2002, p.31) about the phenomena before data collection, followed by systematic and cyclical analysis of data known as the Hermeneutic Circle to deeply evaluate possible conclusions.
Aligning with a Constructivist view, the researcher's deliberate reflexivity and engagement with their own assumptions is viewed as vital to the Hermeneutic interpretation process (Schwandt, 2000). Any findings are considered suggestive, and whilst deepening understanding is the aim, Hermeneutic interpretations do not pertain to find a "finally correct" answer (Schwandt, 2000, p.195).

This approach may prove useful for gaining insight into how my tertiary MT students experience vocal technique group classes. Data collection could include the recording and transcription of one-to-one in-depth semi-structured interviews, whereby conversation is directed by a series of open-ended questions and participants are asked to speak freely on any posed topic (Henn, Weinstein & Foard 2006). This method allows flexibility for the researcher to delve deeper into any element of a response with follow-up prompts, generating greater depth of understanding, establishing further connections between topics, and ideally promoting an atmosphere conducive to comfortable conversation (Queirós, Faria & Fernando, 2017). This method is often laborious and deeply influenced by the researcher's facilitation skills. The interviewer must carefully consider question wording and order, their behaviour and body language throughout, and be mindful of inadvertently revealing personal views during the conversation to best mitigate influencing authenticity of responses (social desirability bias) (Henn, Weinstein & Foard 2006).

Data from semi-structured interviews may present a wealth of data for Hermeneutic analysis, though a comparison of responses could pose challenges if interviews significantly deviated from the original questions.

This is an attractive approach for an MA-level study as with a small sample size, a shorter timeframe could be achievable for data collection. However, challenges arise around managing large amounts of data, the quality of which will be impacted by how accurate and valid a representation of the phenomena is portrayed therein (Denzin & Lincoln, 2000). Careful navigation of the circular interpretation process would be vital in avoiding the potential for over-interpretation of data and any resulting ambiguity or irrelevance of findings. Further, the acknowledgement and impact of a pre-existing teacher-student relationship on responses, as well as any unintentional interviewer cues such as expression or intonation (Easterby-Smith, Thorpe & Jackson, 2012), must be carefully mitigated to maximise data validity.

Ethics and Insider Research

When undertaking any research, ethics serve as a fundamental principle in directing the behaviour of researchers toward what is considered good or right, shaping both the research process and broader impact of findings (Resnik, 2024). Ethical considerations require case-by-case, deliberate, informed approaches, and are seldom “black-and-white” in nature (Cohen, 2017, p.151).

Ethical considerations in research encompass a range of factors including data management, responsible resource use, respect for human rights, considerate treatment of participants, academic honesty and accountability, social integrity, and the communication of research results. Ultimately, the goal of ethical standards in research is to ensure that the research process does not compromise individual or societal welfare, promoting an environment where inquiry can progress responsibly (Cohen, 2017; Miteu, 2024). These standards are especially important when considering the benefits and implications of IR, whereby a practitioner undertakes work-based research in their field.

IR are positioned within the field or community in which they are collecting and analysing data, thus the researcher’s insider perspective and context inevitably affect the research (Costly, Elliott & Gibbs, 2010). Whilst prior knowledge and experience are deemed advantageous in offering depth of comprehension and interpretation in this style of research (Fleming, 2018), significant ethical considerations must be acknowledged. As well as potential for pre-existing relationships and power dynamics between researcher and participants affecting issues of consent and validity of responses, there will always be some

subjectivity, especially through the researcher having vested interests. This raises issues of impartiality and lack of objective data interpretation (Brannick & Coughlan, 2007).

A Pragmatic or Constructivist paradigm may provide transparency to acknowledge and interrogate these biases, increasing validity and rigour. Other safeguards against criticism surrounding the trustworthiness of IR include suggested ongoing researcher self-reflexivity journalling as a method of "detachment from the field" (Greene, 2014, p.5), along with consideration techniques such as method triangulation as described in Lincoln and Guba's (1985) criteria of credibility, confirmability, transferability, and dependability.

Regard for IR has risen in recent years as a worthwhile "attempt to improve practice through understanding" (Fleming, 2018, p.312). This style of research is accessible in an MA context, with my access to tertiary level and professional singers providing potential non-probability sampling opportunities across multiple institutions and MT settings. As a fledgling researcher embracing new paradigmatic views and building an appreciation of the value of work-based research, IR offers an opportunity to develop a professional framework encompassing self-reflexivity and scrutiny in my fields of interest, whilst deeply engaging with the complexities of ethical conduct.

Conclusion

Undertaking this assignment has not only illuminated my previously unacknowledged Realist, Objectivist views on teaching CCM voice styles, but has been the catalyst for significant critical reflection into my axiological stance surrounding the value of qualitative and IR in the field of voice pedagogy. Not yet having formulated a research project, developing a greater understanding of paradigms, methodologies, research designs and methods has underlined the importance of considering multiple approaches to an investigation, whilst striving to interrogate and balance the complexities of ethical conduct (Miteu, 2024). This new awareness has also highlighted the practical considerations of conducting research at an MA-level, and the significance of ongoing self-reflexivity in pursuit of broadening research and pedagogical possibilities.

Appendix

Glossary of Voice and Acoustics-Related Terms

CCM: Contemporary Commercial Music, often referred to when discussing contemporary, non-classical singing styles.

Harmonic: A sound wave with a frequency occurring at an integer multiple of a fundamental (reference) frequency pitch. For example, a pitch with a frequency of 100Hz would have a series of harmonics occurring at 200Hz, 300Hz, 400Hz and so on, vibrating simultaneously above the fundamental frequency (Abraham, 2012).

Placement techniques: These techniques assist a singer to envisage or feel where a sound is made or directed, leading them to either experience or not experience efficient resonance (Johnson, 2023).

Resonance strategy: The intentional manipulation of vocal tract articulators (tongue, jaw, soft palette, lips) to change or track an harmonic position with a vowel formant. Resonance choice creates timbral output (Bozeman, 2013).

Vowel formant: The natural resonance frequencies of the vocal tract contributing to vowel perception (Fant, 1970). Visually represented and measurable using a spectrograph.

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