# A CRITICAL EVALUATION OF METHODOLOGIES, RESEARCH DESIGN AND RESEARCH METHODS FOR A VOCAL PRACTIONER IN A PRIVATE STUDIO

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## Introduction

The aim of this paper is to further understand research design, methodology and the due diligence to ethics and insider research in my discipline as a vocal practitioner in a private studio. An examination of ontology and epistemology and their effect on research will be explored. This paper will investigate four paradigms of positivism, post-positivism, interpretivism and pragmaticism as it provides a broader perspective in vocal pedagogy. An overview of qualitative, quantitative and mixed methodological approaches and their application into research design will be discussed. With my intended focus of qualitative research as a practitioner, different research designs including case study, action research and grounded theory will be examined. This will be followed by a clarification of ethical issues in my research ideas and the implications of being an insider researcher. These aspects will be critically evaluated and tied to my practice.

## Research Philosophy

Axiology examines the value and ethics of a researcher (Biedenbach & Jacobsson, 2016). This in terms shape what exists, ontology, and how knowledge is acquired, epistemology (Allen & Varga, 2007). The nature of research is to rigorously enquire and examine information about a topic or problem that adds knowledge to a specific field (Chia, 2002). The approach of the researcher is influenced by the paradigm. A paradigm is the researcher's worldview (Mackenzie and Knipe, 2006). It represents the beliefs and values (Schwandt, 2014) of how a researcher makes decisions (Kivunja & Kuyini, 2017). Paradigms establish ground rules for the application of the research, setting the scene on the best evaluation of the research topic (Kuhn,1997). Firstly, it is important to understand ontology and epistemology are elements which guide the researcher in discovering what paradigm they are in (Crossan, 2003). Then the paradigm guides the questions to be asked and the appropriate methodology (Crossan, 2003), the strategic plan to acquire knowledge (Scotland, 2012).

### *Ontology and Epistemology*

Ontology, focusing on *what,* and epistemology, focusing on *how* (Potter, 2017), determines an appropriate methodological approach (Weaver & Olson, 2006). Some believe ontology and epistemology influence the theoretical perspectives that determines the research methodology which governs the chosen method (Crotty, 1998; Bracken, 2010).

Moon and Blackman (2014) describe different ontology positions (see figure 1). On one end a naive realist relates one single reality exists independent of human experiences (Moon & Blackman, 2014). Meanwhile relativism advocates the philosophy of reality to be constructed in the mind and that multiple reality exists as individuals have their own version of the truth (Moon & Blackman, 2014). Realities are different due to historical and cultural interpretations (Crotty, 1998). Upon reflection of the literature, my ontology as a vocal teacher is that of a bounded relativist. I believe in one shared reality within the voice community but appreciate different realities exist.

**1.0 ONTOLOGY: What exists in the human world that we can acquire knowledge about?**

← Realism: one reality exists → ← Relativism: multiple realities exist →

| | | | | |
|---|---|---|---|---|
| **1.1 Naïve realism** Reality can be understood using *appropriate* methods | **1.2 Structural realism** Reality is *described* by scientific theory, but its underlying nature remains uncertain | **1.3 Critical realism** Reality captured by broad *critical* examination | **1.4 Bounded relativism** Mental constructions of reality are equal in space & time within boundaries (e.g., cultural, moral, cognitive) | **1.5 Relativism** Realities exist as multiple, intangible mental constructions; no reality beyond subjects |

*Figure 1: Ontology Positions (Moon & Blackman, 2014).*

Moon and Blackman (2014) include three epistemology categories (figure 2). Objectivism assumes reality exists independently of the individual mind (Moon & Blackman, 2014) and the researcher can remain detached from the subject (Pratt, 1998). The facts are in existence for study (Pratt, 1998). On the contrary, subjectivists believe knowledge is dependent on how individuals perceive and understand reality (Moon & Blackman, 2014). Reality is molded to fit the purpose of individuals (Powell, 2001). Individuals will pose meaning and value to the subject and interpretations will vary depending on what makes sense to them (Crotty, 1998). The difference is summarized by Pratt (1998) as seeing is believing (objectivism) and believing determines what is seen (subjectivism).

**2.0 EPISTEMOLOGY: How do we create knowledge?**

| | | |
|---|---|---|
| **2.1 Objectivism** Meaning exists within an object: an objective reality exists in an object independent of the subject | **2.2 Constructionism*** Meaning created from interplay between the subject & object: subject *constructs* reality of object | **2.3 Subjectivism** Meaning exists within the subject: subject imposes meaning on an object |

*Figure 2: Epistemology Positions (Moon & Blackman, 2014).*

From the review of literature, I understand myself to be a constructionist. There exists no absolute truth to be discovered (Moon & Blackman, 2014), truth is dependent on human experience with the realities in the world (Bruner, 1986). Knowledge is constructed through continuous experiences, social interactions and interpretations of information (Crotty, 1998). Schwandt (1994) describes in constructionism, knowledge is absorbed from concepts. The truth is context dependent and is shaped by the various perspectives (Moon & Blackman, 2014).

I acknowledge different individuals will construct meaning on the same subject in different ways. The cultural, historical and social lenses of an individual impact how an individual understands the world (Creswell & Creswell, 2017). Constructionist research is valued in generating contextual understanding of a specific problem (Moon & Blackman, 2014). Through my pedagogical approaches, I highly prioritize promotion of active learning, critical thinking and problem solving rather than delivering facts. I appreciate research findings are influenced by theories and frameworks scientists use to interpret data (Crossan, 2003). I believe students learn through adjusting their approach based on personal discoveries, where understanding is constructed through trial, error and reflection. Constructivist epistemology in vocal pedagogy emphasizes on active learning where students build vocal knowledge through hands-on experience, social interaction with teacher or peers and reflection.

*Paradigms*

Upon understanding ontology and epistemology, a research paradigm (Table 1) for how the research is conducted and interpreted can be formed. Positivism is rooted in the belief that reality is objective and independent of human perception, measurable and understood through empirical methods (Park, Konge & Artino, 2020). This paradigm does not match with my ontology as a bounded relativist which acknowledges different realities exist. In addition, a positivism role does not contend with my constructionism epistemology allowing truth to be dependent on the human experience.

Post-positivism is where there is still belief that an objective reality exists but can only be approximated (Guba, 1989), there is acknowledgement that human observation is imperfect and influenced by biases and limitations (Habib, 2020). The realist ontology of post-positivism does not align with the bounded relativistic approach where reality is not fully objective and is shaped by different contexts. Post-positivism asserts reality exists independently of human perception. Furthermore, a constructionist challenges the foundational belief in objective knowledge which is the pillar for post-positivism (Ryan, 2006). This contradicts post-positivism's belief on objective facts. Thus, the fundamental assumptions of post-positivism are not aligned with my ontological and epistemological views.

| Table 1: Summary of Paradigms | | | |
|---|---|---|---|
| **Paradigms** | **Philosophical stance** | **Features** | **Limitations** |
| Positivism | Focused in the belief that reality is objective, measurable and understood through empirical observation and scientific methods (Scotland, 2012) | • Realist ontology - Researcher is objective and independent from the experience (Park, Konge & Artino, 2020)<br>• Objectivism epistemology - research focus on seeking facts that are observable and measurable (Alharahsheh & Pius, 2020)<br>• Observations are interpretations of facts or measurable entities leading to creditability and meaningfulness of data (Fadhel, 2002)<br>• Focuses on cause-and-effect relationships to further enable creation of generalization (Alharahsheh & Pius, 2020; Park, Konge & Artino, 2020)<br>• Larger sample size is favorable to reveal generalization findings, Park, Konge & Artino, 2020).<br>• Results in a generalized statement to the large populations (Park, Konge & Artino, 2020)<br>• It relies on deductive logic, testing of hypothesis and quantifiable outcomes (Cohen, Manion & Morrison, 2002)<br>• Appropriate for discovering universal laws of nature (Alharahsheh & Pius, 2020) | • With emphasis on objectivity, there is sometimes omission of personal and social factors shaping the research process. Human subjectivity plays a role to the interpretation of results (Wilson, 2014)<br>• The feature of reducing complex phenomena into measurable components may oversimply complex social and cultural processes and omit the influence of other factors (Alharahsheh & Pius, 2020)<br>• With the tendency to dismiss subjective experiences including beliefs and values, a wider broad overview of the phenomena is overlooked (Alharahsheh & Pius, 2020)<br>• Overlooking the influence of context-specific issues (Wilson, 2014)<br>• The intention to uncover generalizable truths may overlook important context-specific variations and intentions of individuals (Collins, 2018)<br>• With the intention of finding scientific knowledge, research methods may dehumanize participants without considering ethical implications of the research process (Collins, 2018)<br>• Inflexible approach as process requires researcher to follow standardized, replicable methods (Wilson, 2014)<br>• Results from quantitative tests is largely dependent on the sample size (Alharahsheh & Pius, 2020) |
| Post-positivism | There is still belief that an objective reality exists but can only be approximated (Guba, 1989) | • Realist ontology - objective reality exists independent of human experiences, it is believed humans can never fully understand reality (Panhwar, Ansari & Shah, 2017)<br>• Closer to subjectivism epistemology - knowledge is fallible and therefore there is no absolute form of knowledge (Panhwar, Ansari & Shah, 2017)<br>• Acknowledgement that human observation is imperfect and influenced by biases and limitations (Habib, 2020).<br>• Understanding is often incomplete, evolving and changes (Miller, 2000)<br>• There may be a reality independent of human thought, understanding of it is through perceptions and conceptual frameworks (Miller, 2000)<br>• Emphasis on the importance of theory and context in interpreting data (Panhwar, Ansari & Shah, 2017)<br>• Beneficial to be flexible and context-sensitive as it is adaptable (Panhwar, Ansari & Shah, 2017) | • Since knowledge is approximate and subject to interpretation, knowledge can be ambiguous and lacks clarity. This makes it challenging to conclude from research (Panhwar, Ansari & Shah, 2017)<br>• Difficulty in separating researcher's perspective, values and experiences from the data and conclusion (Panhwar, Ansari, & Shah, 2017)<br>• Since there is the belief knowledge is only partial, there is the concept that the researched area is impartial and subjective to influences (Miller, 2000)<br>• The knowledge acquired through this paradigm is context-dependent and therefore challenging to generalize findings. Thus it is challenging for external validity of findings (Panhwar, Ansari & Shah, 2017) |
| Interpretivism | Reality is subjective, socially constructed and varies amongst individuals (Bodgan & Biklen, 1998). | • Relativist ontology - Reality is subjective through consideration of meanings as well as understandings of human experience in the research (Saunders et al, 2012)<br>• Subjectivism epistemology – a distinguished relationship between the research and research subject as it believes individuals cannot be divided from their knowledge (Saunders et al, 2012).<br>• Emphasizes understanding human behavior from the perspective of the subjects being studied (Guba, 1989)<br>• Focus on understanding the meaning of interpretations within broader social context (Bodgan & Biklen, 1998)<br>• Reality is continuously negotiated in context (Bodgan & Biklen, 1998) | • Relies significantly on researcher's interpretations which can be potentially bias since the researcher is emerged in the data collection and analysis (Alharahshe & Pius, 2020)<br>• Difficult to replicate, researchers may have different conclusions when examining the same phenomenon due to the subjective nature of interpreting data (Alharahshe & Pius, 2020)<br>• Focus on small sample size and limit's ability to generalize findings to larger populations (Myers, 2019)<br>• Context specific scenarios making it difficult to generalize (Myers, 2019)<br>• Emphasis on individual perspectives therefore potentially researcher may lack the objective mindset of other paradigms and downplay the broader structural factors that shape social phenome including social, political and economic forces (Alharahshe & Pius, 2020)<br>• Does not establish causal relationships or predict future outcomes, focus on understanding how people make sense of the world which results in limitations to use the information to make interventional strategies (Myers, 2019) |
| Pragmatism | Advocates for the truth which is provisional (Kaushik & Walsh, 2019). Meaning is tied to human experience and needs and is dependent upon context (Dillon, O'Brien & Heilman, 2000) | • Relativism Ontology – reality is multifaceted and acknowledges it is context dependent. Different interpretations of reality exist based on experience and situation (Morgan, 2013)<br>• Constructivism Epistemology – knowledge is constructed through experience and is not fixed but rather evolving (Morgan, 2013)<br>• Belief that researchers should use methodological approach that is best for the research problem (Tashakkori, 1998).<br>• Focus to be on the consequence of the research rather than on the method chosen (Kaushik & Walsh, 2019)<br>• Flexible in methodology to allow solution for the problem at hand to be solved through the research (Creswell & Clark, 2017)<br>• Emphasis on practical solutions based on the research and produce actionable strategies. Focus on real world considerations (Kaushik & Walsh, 2019)<br>• Accepts reality can be understood in multiple ways dependent on context (Morgan, 2013)<br>• Values variety of perspectives that contribute to deeper understanding (Morgan, 2013)<br>• Focus on outcomes and consequences (Morgan, 2013)<br>• Research is problem centered rather than adhering to particularly philosophical stance (Kaushik & Walsh, 2019) | • With an emphasis on practical outcomes, definition of truth and reality is fluid and challenging to define clear standards for what is knowledge (Kaushik & Walsh, 2019)<br>• Truth is context dependent and evolving which may lead to confusion if parameters of context is not defined with clarity (Kaushik & Walsh, 2019)<br>• Using both empirical and experiential knowledge adds to the confusion to the epistemology stance of the researcher compared to traditional paradigms (Creswell & Clark, 2017)<br>• Challenging to replicate since the approach focuses on adaptability to the research problem on hand (Dillon, O'Brien & Heilman, 2000)<br>• Difficult to generalize since the research is context specific knowledge which may not be applicable to larger populations (Dillon, O'Brien & Heilman, 2000)<br>• With a focus of practical outcomes there can be tendency to solve immediate problems rather than building long term theoretical frameworks (Kaushik & Walsh, 2019)<br>• Challenging for a universal criterion for evaluating the quality of research findings since truth is relative to its context (Kaushik & Walsh, 2019) |

*Table 1: Summary of Paradigms*

Interpretivism emphasizes reality is subjective, socially constructed and varies amongst individuals (Bodgan & Biklen, 1998). It is important to note this paradigm focuses on understanding the meaning of interpretations within broader social contexts (Bodgan & Biklen, 1998), while a bounded relativist holds that reality is relative to the individual and context. A more fluid meaning of context makes interpretivist ontology inconsistent with a bounded relativist which assumes a more defined limit on reality (Nickerson, 2002). An interpretivist's more open-ended approach to meaning and knowledge is incompatible with the context-specific, bounded nature of a relativism and the co-constructed view of knowledge in constructionism.

Pragmatism targets the practical application of knowledge and solving problems (Alise & Teddlie, 2010). It emphasizes the outcome and usefulness of research rather than adhering to a particular philosophy of knowledge (Biesta, 2021), focusing on *what works* to allow the researcher to address the question investigated (Patton, 1990). A pragmatic approach aligns well with bounded relativism and constructivism for several reasons. Bounded relativism emphasizes reality is not entirely objective but is understood relative to contexts. There is acknowledgement of shared experiences and common realities. The perspectives are limited by context. Although pragmatism does not have as rigid ontology as a bounded relativist, it recognizes there are no absolute truths but seeks the truth of what works in particular context. Pragmatism aligns with constructivism because it supports that knowledge is not discovered in an objective, detached way, built through experiences and social interactions (Morgan, 2014). Knowledge is a means to solve problems to meet practical needs. Both pragmatism and constructionism share the view that knowledge is flexible and context-dependent (Osbeck, 1993). Both follow the framework that truth and knowledge emerge from real world context and human experiences (Osbeck, 2013). For these reasons, a pragmatic paradigm aligns with my ontology and epistemology.

### *Methodological Approaches*

Research methodologies are systematic approaches to guide the collection, analysis and interpretation of data (Firdaus, Zulfadilla & Caniago, 2021). Primary research methodologies include qualitative, quantitative and mixed methods (Hyde, 2000). Qualitative research explores phenomena and gains insights into human experiences within a context (Hammarberg, Kirkman & De Lacey, 2016). It seeks to understand individual's thoughts, behaviors and perspectives (Clarke & Jack, 1998). This method is flexible and adaptive as the research progresses (Clark & Jack, 1998). In addition, the complexity and nuance of the

situation can be further understood and does not oversimplify the context (Briedwell et al, 2008). Qualitative research, although flexible in allowing researchers to adapt their approach based on new insights, can sometimes be seen as lightweight since it involves a smaller sample which may not be representative of the generalized population (Hammarberg, Kirkman & De Lacy, 2016). The results may be assessed as biased by the researcher's opinions due to its interpretative nature (Busetto, Wick & Gumbinger, 2020). The data is more flexible and open-ended and may not have a standardized way for analysis which can result in variations and difficulty to replicate (Bloomfield & Fisher, 2019). However, due to its ability to generate narrative data, there is the opportunity to provide an in-depth holistic view of the research problem which may be overlooked in quantitative studies (Creswell, 1999). An example of the qualitative method is Lamont and colleagues' (2012) study of good singing practice in music education. A series of interviews and observations were conducted to understand how singing practice was put into place in different classrooms. This is an example of the small sample size in qualitative research where only seven schools were chosen, thus there is reduced generalizability.

On the contrary, quantitative research focuses on gathering numerical data and applying statistical analysis to understand relationships and patterns (Osborne, 2008). A quantifiable model is used in this method as it is measurable and comparable (Sukamolson, 2007). Keltz & McHenry (2022) used measured data points to compare effectiveness of adding steam to Semi Occluded Vocal Tract (SOVT) exercises. Information is objective and structured since the design is standardized to ensure consistency in data collection; thus, the research is replicable (Goertzen, 2017). A larger sample size compared to qualitative method is used allowing the results to be generalized for the larger population (Osborne, 2008). There is often a limit to the ability of flexibility for unexpected findings (Holton & Burnett, 2005). This method often focuses on breadth rather than depth which can limit the understanding of the results in context (Hancock et al, 2010). With a focus on the measurable variables only, situations may be oversimplified (Goertzen, 2017). There is minimal flexibility as the data collection tools are all designed to be applied in the same manner (Sukamolson, 2007).

It is commonly agreed the mixed method approach combines both qualitative and quantitative ideas for a more comprehensive understanding (Creswell, 1999). Davis and colleagues (2023) used a mixed method approach to understand the impact of group singing on children's well-being. Quantitatively a Likert scale was used to measure children's subjective well-being. The qualitative component utilized a focus group to understand children's

enjoyment of the group singing. The depth of qualitative data and breadth of quantitative data contributes to a more comprehensive conclusion (Doyle, Brady & Byrne, 2009). In addition, using both methods allow for cross-validation of findings (De Lilse, 2011). When qualitative and quantitative results align, the credibility of the conclusion is strengthened (Almalki, 2016). If the results different, the opportunity to explore the reason for the difference allows for deeper insights (Almalki, 2016). Furthermore, mixed method allows greater flexibility to dive into complex questions that may not be answered fully with one method alone (De Lilse, 2011). For these reasons a broader scope of application for the outcome may result from the mixed method approach (Lindsay, 2013).

### *Research Designs*

As a vocal practitioner the nature of my work will be research focused on the human experiences, thus a qualitative methodology would be appropriate. This informs my research design to focus on case study, action research and grounded theory for qualitative research (Tesch, 2013). Case studies are used to investigate phenomena in real-life natural environments (Yin, 2009). It examines in-depth scenarios of an individual, group or community (Hollweck & Yin, 2015) with a defined boundary (Merriam, 1998). Multiple data sources are used to build a comprehensive understanding of the case including interviews, observations, and surveys (Yin, 2009). The intention is not to conclude on a generalization to larger population but to gain insights to a specific context (Hancock, Algozzine & Lim, 2021). New insights are obtained and the researcher has a learn by doing approach, the researcher is closely engaged with the participants studied (Merriam, 1998). Tools include interviews, narratives, and direct observations (Anaf, Drummond & Sheppard, 2007). The goal is to create a chain of evidence through multiple sources (Yin, 2009). This is open-ended and flexible to address new avenues of exploration as they emerge. The analysis is to address all major rival interpretations (Yin, 2009). Case studies are the preferred strategy for addressing *how* and *why* questions (Yin, 2009). A powerful point of case studies is that it is observed within the natural environment of the situation (Stake, 2008). Analysis is those with integrated interpretations of the situation and context (Stake, 2008). Reflection is viewed as an important element in case studies as it considers impressions and the meaning relating to the context and experience (Stake, 2008). Case study research design ties into my pragmatic paradigm where I can focus on understanding specific pedagogical implications of strategies and construct my epistemology from the study. However, the research would be context specific and may not be applicable for general application across different students in my vocal practice.

Action research is an approach suitable for problem-solving and knowledge generation in a specific setting (Somekh, 2006). The practice and research are interconnected, combining theory and practice through changes initiated through reflection (Avison et al, 1999). There is a focus on collaboration and reflection to improve actionable insights (Avison et al, 1999). This is a method frequently found in music education and is used by teachers to improve their own practice (Whitehead, 1989). This method encourages researchers to experiment through intervention and to reflect on the impact of the intervention and implication to the situation (Cain, 2008). This method is in line with my epistemology as a constructionist, where the practitioner constructs their own knowledge throughout the cyclical process of planning, application, reflection and continued action based on improvements (Ormell, 2000). The featured collaboration with others along with the researcher results in a co-created solution (Cain, 2008). Several music teachers have reported profound impact on learning through action research (Legar & Collay, 2002). Miller (2004) used action research to understand how composition projections can be incorporated in elementary lessons. The ultimate goal is achieving holistic integration (Somekh, 2006) through action strategies bringing positive change. Conway & Borst (2001) noted several action research studies are not actually cyclical and some were only before and after studies. Cain's (2008) review of music education action research demonstrated there is not yet a substantial body of research in this method within music education. There are challenges as seen above but can lead to powerful learning for the participant and researcher (Cain, 2008).

Grounded theory is suitable to explore human experience phenomena, starting first with data collection and allowing the theory to emerge from the data (Chun, Birks & Francis, 2019). This is an inductive approach where conceptual framework is developed from the data; thus the theory concluded is closely tied to the experiences of the participants (Mills, Bonner & Francis, 2006). Data is constantly compared to previous data to identify patterns and themes. Coding is used to present ideas and to organize information, when no more new patterns are seen, the collection of data is complete (Charmaz, 2015). This design is effective in studying social processes and understanding how individuals make sense of their experiences (Malik, 2000). This design can be applied in a vocal practitioner setting; however, a larger population compared to action research may need to be used to support a generalization of a universal law in voice pedagogy (Uri, 2015). Furthermore, this theory takes a long time and is not suitable for projects with limited timeline such as my research (Uri, 2015).

*Research Methods*

Interviews are used as a method of collecting qualitative data to allow for in-depth exploration of participant experiences. It focuses on a holistic snapshot of the research area, providing detailed description of individuals in their natural settings (Alshenqueeti, 2014). It enables interviewees to express their own thoughts and feelings (Lune & Berg, 2017) and to attain information that is not observable (Kvale, 1996). The interactive element of interviews can capture a more holistic and in-depth information on the phenomena (Barbour & Schostak, 2005). One-on-one interviews are the most common. In a structured interview where a set of predetermined questions that require mostly yes or no responses have little freedom (Lune & Berg, 2017). A second type of interview is the unstructured interview where there are minimal predetermined questions and the conversation flows naturally, allowing the researcher to follow up on the interviewee's responses and guide the discussion (Gubrium & Hostein, 2002). The third type is a semi-structured interview where it is the structured interview version but allows in depth probing and expanding on the interviewee's response (Rubin & Rubin, 2011). Like any other research tool, interviews have drawbacks. The information collected will be shaped by the questions that are asked and reveal only what they are prepared to share about their perceptions (Hammersley & Gomm, 2008). Perceptions can be subjective and may change over time. Thus Walford (2007) argues interviews alone is an insufficient form of data. In addition, the information collected from interviews may clash and deceive (Barbour & Schostack, 2005), thus careful analysis is required in the interview data. Analysis can be done through coding where meaningful data units are generated and classification of the information is done with the units (Brown, 2001); however, this transcription and coding process is time consuming (Robson, 2002).

In questionnaires there is a standardization as all questions are the same for all participants (Fink, 2003). There may be less researcher bias since influence of researcher's bias is minimized during the data collection process (Hox et al, 2002). Questionnaire based method is not suggested if the researcher knows little of the topic area as open-ended questions tend to allow more depth in the participant's response (Rattray & Jones, 2007). It can be an efficient method as it can be distributed online to all participants and is generally cost-effective for administration (Rattray & Jones, 2007). For this reason, the sample size may be larger (Rattray & Jones, 2007). It can also provide both quantitative or qualitative data (Hox et al, 2002). The downfalls of this design are the negative impact of non-response or respondents' misinterpretation of question (Hox et al, 2002). Analysis has shown questions should be short

(Fink, 2003), simple questions (Brace, 2004), and thoughtful in the order as the context of the previous question often influences the response of the next (Lietz, 2010).

Diary methods involve participants to record entries in a notebook regarding events that have happened, allowing researchers to access the participant's perspectives on thoughts and experience (Wheeler & Reis, 1991). The information is usually private and time-structured (Alaszewksi, 2006). A major benefit is that the report and experiences are in the participant's natural spontaneous context (Reis, 2013). Research goals diary methods tend to achieve are investigation of the research area as it unfolds over time or detailed examination of specific phenomena (Bolger, Davis & Rafaeli, 2003). There are limitations to this method, it requires detailed training sessions to ensure the participants fully understand the execution steps (Reis & Gable, 2000). There needs to be a high level of commitment and dedication of the participant (Reis & Gable, 2000). The repeated process required for participants may be of burden, thus researchers tend to design parameters which are short and easy to complete for the participants (Reis & Gable, 2000). In doing so, this limits the diary entry to less complete reporting of the phenomenon (Bolger, Davis & Rafaeli, 2003). Furthermore, personal information or symptoms such as alcohol consumption or learning disabilities may result in selective bias in the response of the diary entries (Bolger, Davis & Rafaeli, 2003).

### *Ethics and Insider Research*

Ethics in research is the action and behavior of the researcher (Mathur & Corley, 2014). Furman (2004) defines five frameworks of ethics in education, the ethics of care, justice, critique, professional and community. Ethics of care emphasizes the teacher is not only an authority figure but assists in nurturing intellectual, emotional and social development of students (Held, 2005). Ethics of justice guides the moral principles and considerations guiding fairness, equality and rights (Sullivan, 1986). Critical reflection is done in identifying shortcomings and pursuit of improvements to advance justice. Ethics of critique focuses on the considerations in questioning, reflecting and challenging practices and systems (Giroux, 2003). Professional ethics are the principles and standards guiding behavior, actions and decisions (Shapiro & Stefkovich, 2016). Integrity and honesty in the transparency in relationships between teacher and student is valued (Mathur & Cortley, 2014). Ethics of community refers to the moral principles of how educational systems or individuals engage in creating sustaining inclusive collaborative learning environments (Furman, 2004). The emphasis is on building a sense of belonging and shared responsibility (Mathur & Cortley, 2014).

Core ethical principles for researchers with human participants include respect for persons, beneficence (do good), non-maleficence (do not harm) and justice (Gostin, 1991). Beneficence is the moral obligation to maximize benefits so that the research contributes positively to society (Beauchamp, 2008). Non-maleficence dictates researchers to avoid causing harm to participants and reduce changes of risks related to the research (John & Wu, 2022). Justice is concerned with participants selected fairly and treated equitably (Gostin, 1991). In addition, consent (Gostin, 1991), anonymity (Wiles et al, 2008), confidentiality (Wiles et al, 2008), and the right to withdrawal at any time (Dahal, 2024) are ethical safeguarding principles.

An insider is defined as a researcher conducting research in the same setting as the participants (Kanuha, 2000) sharing the same experience in work place settings (Asselin, 2003). Participants are often more open and trusting with the researcher and allows for more in-depth data (Dwyer & Buckle, 2009). The commonality adds comfort for the participant because there is an assumption of understanding (Dweyer & Buckle, 2009). However, the dual role of the researcher may result in participants not explaining their individual experience clearly since it is assumed the researcher understands them (Dweyer & Buckle, 2009). The data collected may be shaped by the researcher's experience rather than the participant's (Dweyer & Buckle, 2009). Bias, an inclination towards desirability response, can lead to inaccurate conclusion (Randall & Fernandes,1991). In research, bias is present when there are systematic errors in the testing or when one outcome is preferred over the other (Pannucci & Wilkins, 2010). Mitigation of bias will allow the data to be applicable to a broad range of perspectives and contexts (Smith & Noble, 2014). Strategies to mitigate bias include being transparent about all aspects of the research process (Marcelin et al, 2019). Furthermore, to prevent confirmation bias where the researcher conducts the research with the intention of confirming their preexisting belief, a self-assessment of the researcher's own bias allows the researcher to be aware of the bias and to approach the study with an open mind (Marcelin et al, 2019). Peer review and replications are ways to mitigate this (Haffar, 2019). Prior to conducting the research, proposals to an ethical review board ensures the researchers follow ethical standards and minimize harm to participants (Drolet et al, 2023). Consent to participants detailing purpose, procedure and potential risks with the option to withdraw at any point in time protects the participants (Wendler, 2020). Protecting confidentiality of data and anonymization can reduce the risk of harm (Wendler, 2020).

## Conclusion

As informed by the review of literature, ontology and epistemology have profound influence on the whole research project, from influencing the paradigm to the methodologies chosen leading to the research design and specific methods. Having evaluated my bounded relativism and constructionist view, my pragmatic paradigm likely will lead me to focus on qualitative research since I intend to understand the human experience of vocal learners. The chosen method will include interviews for an in-depth understanding of the vocalists' experience. As an insider researcher, my integral role in the research implies I need to mitigate bias through transparency of the process and to conduct a self-assessment of my own bias prior to commencing with the research.

**Reference List**


Adler, P.A. and Adler, P., 1987. *Membership roles in field research* (Vol. 6). Sage.

Aguinis, H. and Henle, C.A., 2004. Ethics in research. *Handbook of research methods in industrial and organizational psychology*, pp.34-56.

Alaszewski, A. 2006. Using Diaries for Social Research. London: Sage

Alharahsheh, H.H. and Pius, A., 2020. A review of key paradigms: Positivism VS interpretivism. *Global Academic Journal of Humanities and Social Sciences*, *2*(3), pp.39-43.'

Alise, M.A. and Teddlie, C., 2010. A continuation of the paradigm wars? Prevalence rates of methodological approaches across the social/behavioral sciences. *Journal of mixed methods research*, *4*(2), pp.103-126.

Allen, P.M. and Varga, L., 2007. Complexity: the co-evolution of epistemology, axiology and ontology. *Nonlinear Dynamics, Psychology, and Life Sciences*, *11*(1), p.19.

Almalki, S., 2016. Integrating Quantitative and Qualitative Data in Mixed Methods Research--Challenges and Benefits. *Journal of education and learning*, *5*(3), pp.288-296.

Alshenqeeti, H., 2014. Interviewing as a data collection method: A critical review. *English linguistics research*, *3*(1), pp.39-45.



Alshenqeeti, H., 2014. Interviewing as a data collection method: A critical review. *English linguistics research*, *3*(1), pp.39-45.



Anaf, S., Drummond, C. and Sheppard, L.A., 2007. Combining case study research and systems theory as a heuristic model. *Qualitative Health Research*, *17*(10), pp.1309-1315.

Andrews, F.M., 1984. Construct validity and error components of survey measures: A structural modeling approach. *Public opinion quarterly*, *48*(2), pp.409-442.

Armstrong, M.S.D., 2003. *Women leaving heterosexuality at mid-life: Transformations in self and relations* (pp. 4359-4359). Doctoral dissertation). Available from ProQuest Dissertations and Theses.(UMI No. NQ71954).

Asselin, M.E., 2003. Insider research: Issues to consider when doing qualitative research in your own setting. *Journal for Nurses in Professional Development*, *19*(2), pp.99-103.

Avison, D.E., Lau, F., Myers, M.D. and Nielsen, P.A., 1999. Action research. *Communications of the ACM*, *42*(1), pp.94-97.

Ayres, L., Kavanaugh, K. and Knafl, K.A., 2003. Within-case and across-case approaches to qualitative data analysis. *Qualitative health research*, *13*(6), pp.871-883.

Barbour, R.S. and Schostak, J., 2005. Interviewing and focus groups. *Research methods in the social sciences*, *1*(1), pp.41-48.

Barbour, R.S. and Schostak, J., 2005. Interviewing and focus groups. *Research methods in the social sciences*, *1*(1), pp.41-48.

Bartoskova, M., 2024. The Role of the Vagus Nerve in Speaking and Singing. *Voice and Speech Review*, pp.1-16.

Beauchamp, T., 2008. The principle of beneficence in applied ethics.

Bhatt, S., Scearce, L., Frank-Ito, D., Nixon, T. and Umstead, K.A., 2023. A Human-Centered Design Approach to SOVTE Straw Phonation Instruction. *Journal of Voice*.

Bhattacharya, K., 2017. *Fundamentals of qualitative research: A practical guide*. Routledge.

Biedenbach, T. and Jacobsson, M., 2016. The open secret of values: The roles of values and axiology in project research. *Project management journal*, *47*(3), pp.139-155.

Biesta, G., 2021. *Pragmatism and the philosophical foundations of mixed methods research. Sage handbook of mixed methods in social & behavioral research*, p.95.

Blair, E., Sudman, S., Bradburn, N.M. and Stocking, C., 1977. How to ask questions about drinking and sex: Response effects in measuring consumer behavior. *Journal of marketing Research*, *14*(3), pp.316-321.

Bloomfield, J. and Fisher, M.J., 2019. Quantitative research design. *Journal of the Australasian Rehabilitation Nurses Association*, *22*(2), pp.27-30.

Bogdan, R.C. and Biklen, S.K., 1998. Foundations of qualitative research in education. *Qualitative research in education: An introduction to theory and methods*, *1*, p.48.

Bolger, N., Davis, A. and Rafaeli, E., 2003. Diary methods: Capturing life as it is lived. *Annual review of psychology*, *54*(1), pp.579-616.

Booth, W.C., Colomb, G.G., Williams, J.M., Bizup, J. and FitzGerald, W.T., 2016. The craft of research (Fourth).

Bozeman, K.W. (2014). *Practical vocal acoustics: pedagogic applications for teachers and singers*

Brace, I., 2004. Questionnaire design: How to plan, structure and write survey material for effective market research. London. *Market Research in Practice Series*, p.82.

Bracken, S., 2010. Discussing the importance of ontology and epistemology awareness in practitioner research. *Worcester Journal of learning and teaching*, (4).

Breen, R.L., 2006. A practical guide to focus-group research. *Journal of geography in higher education*, *30*(3), pp.463-475.

Bresler, L., 1996. Basic and applied qualitative research in music education. *Research Studies in Music Education*, *6*(1), pp.5-17.

Bridewell, W., Langley, P., Todorovski, L. and Džeroski, S., 2008. Inductive process modeling. *Machine learning*, *71*, pp.1-32.

Brislin, R.W., 1986. The wording and translation of research instruments. *Field methods in cross-cultural research/Sage*.

Broderick, A.A., Hawkins, G., Henze, S., Mirasol-Spath, C., Pollack-Berkovits, R., Clune, H.P., Skovera, E. and Steel, C., 2012. Teacher counternarratives: Transgressing and 'restorying'disability in education. *International Journal of Inclusive Education*, *16*(8), pp.825-842.

Brown, J., 2023. Imagery and science in singing pedagogy: Redefining imagination–A first step to resolving the debate. *Voice and Speech Review*, *17*(1), pp.26-35.

Brown, M.E. and Dueñas, A.N., 2020. A medical science educator's guide to selecting a research paradigm: building a basis for better research. *Medical Science Educator*, *30*(1), pp.545-553.

Busetto, L., Wick, W. and Gumbinger, C., 2020. How to use and assess qualitative research methods. *Neurological Research and practice*, *2*(1), p.14.

Byrne, C. and MacDonald, R.A., 2002. The use of information & communication technology (I&CT) in the Scottish Music Curriculum: a focus group investigation of themes and issues. *Music Education Research*, *4*(2), pp.263-273.

Cain, T., 2008. The characteristics of action research in music education. *British Journal of Music Education*, *25*(3), pp.283-313.

Chapman, J.L. and Morris, R., 2021. *Singing and teaching singing: A holistic approach to classical voice* (Vol. 1). Plural Publishing.

Charmaz, K., 2015. Grounded theory. *Qualitative psychology: A practical guide to research methods*, *3*, pp.53-84.

Chia, R., 2002. Philosophy and research. *Essential skills for management research*, pp.1-19.

Chilisa, B. and Kawulich, B., 2012. Selecting a research approach: Paradigm, methodology and methods. *Doing social research: A global context*, *5*(1), pp.51-61.

Chun Tie, Y., Birks, M. and Francis, K., 2019. Grounded theory research: A design framework for novice researchers. *SAGE open medicine*, *7*, p.2050312118822927.

Clarke, A.M. and Jack, B., 1998. The benefits of using qualitative research. *Professional Nurse (London, England)*, *13*(12), pp.845-847.

Cohen, L., Manion, L. and Morrison, K., 2002. *Research methods in education*. Routledge.

Collins, H., 2018. *Creative research: the theory and practice of research for the creative industries*. Bloomsbury Publishing.

Conway, C.M. and Borst, J., 2001. Action research in music education. *Update: Applications of research in music education*, *19*(2), pp.3-8.

Creswell, J.W. and Clark, V.L.P., 2017. *Designing and conducting mixed methods research*. Sage publications.

Creswell, J.W., 1999. Mixed-method research: Introduction and application. In *Handbook of educational policy* (pp. 455-472). Academic press.

Crossan, F., 2003. Research philosophy: towards an understanding. *Nurse Researcher (through 2013)*, *11*(1), p.46.

Crotty, M., 1998. The foundations of social research: Meaning and perspective in the research process.

Dahal, B., 2024. Participants' Right to Withdraw from Research: Researchers' Lived Experiences on Ethics of Withdrawal. *Journal of Academic Ethics*, *22*(1), pp.191-209.

Davies, J., Bentham, S. and Duah, F., 2023. The impact of group singing on children's subjective well-being: Mixed methods research. *Children & Society*, *37*(4), pp.1252-1273.

Deane, P., 2018. A guide for interdisciplinary researchers: Adding axiology alongside ontology and epistemology. *Integration and Implementation Insights, May*, *22*.

De Lisle, J., 2011. The benefits and challenges of mixing methods and methodologies: Lessons learnt from implementing qualitatively led mixed methods research designs in Trinidad and Tobago. *Caribbean curriculum*, *18*, pp.87-120.

Diaz, J.A., Rangarathnam, A.B., Medina, A., Khare, V.D. and Fisher, H.R., 2023. Preliminary Perceptual Findings of Singing After Flow Phonation Voice Exercises for Singers in Training. *Journal of Voice*.

Diller, A., 2018. The ethics of care and education: A new paradigm, its critics, and its educational significance. In *The gender question in education* (pp. 89-104). Routledge.

Dillon, D.R., O'Brien, D.G. and Heilman, E.E., 2000. Literacy research in the next millennium: From paradigms to pragmatism and practicality. *Reading Research Quarterly*, *35*(1), pp.10-26.

Doscher, B.M., 2023. *The functional unity of the singing voice*. Rowman & Littlefield.

Doyle, L., Brady, A.M. and Byrne, G., 2009. An overview of mixed methods research. *Journal of research in nursing*, *14*(2), pp.175-185.

Drolet, M.J., Rose-Derouin, E., Leblanc, J.C., Ruest, M. and Williams-Jones, B., 2023. Ethical issues in research: Perceptions of researchers, research ethics board members and research ethics experts. *Journal of Academic Ethics*, *21*(2), pp.269-292.

Dwyer, S.C. and Buckle, J.L., 2009. The space between: On being an insider-outsider in qualitative research. *International journal of qualitative methods*, *8*(1), pp.54-63.

Edelheim, J.R., 2014. Ontological, epistemological and axiological issues. In *The Routledge handbook of tourism and hospitality education* (pp. 30-42). Routledge.

Fadhel, K., 2002. Positivist and hermeneutic paradigm, A critical evaluation under their structure of scientific practice. *The Sosland Journal*, *6*(5), pp.21-28.

Fink, A., 2003. *How to ask survey questions* (Vol. 1). Sage.

Firdaus, F., Zulfadilla, Z. and Caniago, F., 2021. Research methodology: types in the new perspective. *Manazhim*, *3*(1), pp.1-16.

Furman, G.C., 2004. The ethic of community. *Journal of educational administration*, *42*(2), pp.215-235.

Giroux, H.A., 2003. *The abandoned generation: Democracy beyond the culture of fear*. Palgrave Macmillan.

Glesne, C., 2016. *Becoming qualitative researchers: An introduction*. Pearson. One Lake Street, Upper Saddle River, New Jersey 07458.

Goertzen, M.J., 2017. Introduction to quantitative research and data. *Library technology reports*, *53*(4), pp.12-18.

Goldman, K.H. and Bendoly, L., 2003. Investigating Heuristic Evaluation: A Case Study.

Gorges, J.C. and Beraldo, D., 2023. The Insertion of Semioccluded Vocal Tract Exercises in the Teaching and Practice of Vocal Technique-A systematic review and Case Study among Vocal Technique Teachers Residing in Brazil and Portugal. *Scientific Journal of Research & Reviews*.

Gostin, L., 1991. Ethical principles for the conduct of human subject research: population-based research and ethics. *Law, Medicine and Healthcare*, *19*(3-4), pp.191-201.

Grant, C. and Osanloo, A., 2014. Understanding, selecting, and integrating a theoretical framework in dissertation research: Creating the blueprint for your “house”. *Administrative issues journal*, *4*(2), p.4.

Grant, C. and Osanloo, A., 2014. Understanding, selecting, and integrating a theoretical framework in dissertation research: Creating the blueprint for your “house”. *Administrative issues journal*, *4*(2), p.4.

Guba, E.G., 1989. *Fourth generation evaluation* (Vol. 294). Sage.

Gubrium, J.F. and Holstein, J.A. eds., 2002. *Handbook of interview research: Context and method*. Sage.

Habib, H., 2020. Positivism and post-positivistic approaches to research. *UGC Care Journal*, *31*(17), pp.1000-1007.

Haffar, S., Bazerbachi, F. and Murad, M.H., 2019, April. Peer review bias: a critical review. In *Mayo Clinic Proceedings* (Vol. 94, No. 4, pp. 670-676). Elsevier.

Hammarberg, K., Kirkman, M. and De Lacey, S., 2016. Qualitative research methods: when to use them and how to judge them. *Human reproduction*, *31*(3), pp.498-501.

Hammersley, M., 2004. Action research: a contradiction in terms?. *Oxford Review of Education*, *30*(2), pp.165-181.

Hancock, D.R., Algozzine, B. and Lim, J.H., 2021. Doing case study research: A practical guide for beginning researchers.

Hancock, G.R., Mueller, R.O. and Stapleton, L.M., 2010. *The reviewer's guide to quantitative methods in the social sciences*. Routledge.

Held, V., 2005. *The ethics of care: Personal, political, and global*. Oxford university press.

Heller, G.Z., Manuguerra, M. and Chow, R., 2016. How to analyze the Visual Analogue Scale: Myths, truths and clinical relevance. *Scandinavian journal of pain*, *13*(1), pp.67-75.

Heller-Stark, A., Maxfield, L., Herrick, J., Smith, M. and Titze, I., 2024. Comparative Study of Two Semi-Occluded Vocal Tract Protocols: A Randomized Clinical Trial. *Journal of Speech, Language, and Hearing Research*, *67*(11), pp.4275-4287.

Hermanowicz, J.C., 2002. The great interview: 25 strategies for studying people in bed. *Qualitative sociology*, *25*, pp.479-499.

Ho, D.G., 2006. The focus group interview: Rising to the challenge in qualitative research methodology. *Australian review of applied linguistics*, *29*(1), pp.5-1.

Holbrook, A., Cho, Y.I. and Johnson, T., 2006. The impact of question and respondent characteristics on comprehension and mapping difficulties. *International Journal of Public Opinion Quarterly*, *70*(4), pp.565-595.

Hollweck, T., 2015. R. Yin.(2014). Case Study Research Design and Methods . *Canadian Journal of Program Evaluation*, *30*(1), pp.108-110.

Holmes, A.G.D., 2020. Researcher Positionality--A Consideration of Its Influence and Place in Qualitative Research--A New Researcher Guide. *Shanlax International Journal of Education*, *8*(4), pp.1-10.

Holton, E.F. and Burnett, M.F., 2005. The basics of quantitative research. *Research in organizations: Foundations and methods of inquiry*, pp.29-44.

Hox, J., De Leeuw, E., Couper, M.P., Groves, R.M., De Heer, W. and Kuusela, V., 2002. The influence of interviewers' attitude and behavior on household survey nonresponse: An international comparison. *Survey nonresponse*, pp.103-120.

Hyde, K.F., 2000. Recognising deductive processes in qualitative research. *Qualitative market research: An international journal*, *3*(2), pp.82-90.

Hyde, K.F., 2000. Recognising deductive processes in qualitative research. *Qualitative market research: An international journal*, *3*(2), pp.82-90.

John, S. and Wu, J., 2022. "First, Do No Harm"? Non-Maleficence, Population Health, and the Ethics of Risk. *Social Theory and Practice*, *48*(3), pp.525-551.

Johnson, R.B., Onwuegbuzie, A.J. and Turner, L.A., 2007. Toward a definition of mixed methods research. *Journal of mixed methods research*, *1*(2), pp.112-133.

Kanuha, V.K., 2000. "Being" native versus "going native": Conducting social work research as an insider. *Social work*, *45*(5), pp.439-447.

Kaushik, V. and Walsh, C.A., 2019. Pragmatism as a research paradigm and its implications for social work research. *Social sciences*, *8*(9), p.255.

Kivunja, C. and Kuyini, A.B., 2017. Understanding and applying research paradigms in educational contexts. *International Journal of higher education*, *6*(5), pp.26-41.

Kuhn, T.S., 1997. *The structure of scientific revolutions* (Vol. 962). Chicago: University of Chicago press.

Kvale, S., 1996. *InterViews: an introduction to qualitive research interviewing*. Sage.

Lamont, A., Daubney, A. and Spruce, G., 2012. Singing in primary schools: case studies of good practice in whole class vocal tuition. *British Journal of Music Education*, *29*(2), pp.251-268.

Laukkanen, A.M., Radolf, V., Bula, V., Horáček, J. and Geneid, A., 2024. Glottal imaging study comparing vowel phonation with semioccluded vocal tract exercises (SOVTEs) produced loudly. *Journal of Voice*.

Leglar, M. and Collay, M., 2002. Research by teachers on teacher education. In *The new handbook of research on music teaching and learning: A project of the Music Educators National Conference* (pp. 855-873). Oxford University Press.

Lietz, P., 2010. Research into questionnaire design: A summary of the literature. *International journal of market research*, *52*(2), pp.249-272.

Lindsay, G., 2013. The benefits of combined (mixed) methods research. *Social Work and Social Sciences Review*, *16*(2), pp.76-87.

Lune, H. and Berg, B.L., 2017. *Qualitative research methods for the social sciences*. Pearson.

Macdonald, R. and Wilson, G., 2005. Musical identities of professional jazz musicians: A focus group investigation. *Psychology of music*, *33*(4), pp.395-417.

Mackenzie, N. and Knipe, S., 2006. Research dilemmas: Paradigms, methods and methodology. *Issues in educational research*, *16*(2), pp.193-205.

Mackenzie, N. and Knipe, S., 2006. Research dilemmas: Paradigms, methods and methodology. *Issues in educational research*, *16*(2), pp.193-205.

Malterud, K., 2001. Qualitative research: standards, challenges, and guidelines. *The lancet*, *358*(9280), pp.483-488.

Manternach, B., Maxfield, L. and Manternach, J.N., 2021. Effects of varied semi-occluded vocal tract exercises on acoustic and perceptual measures of music theatre singers: A pilot study. *Voice and Speech Review*, *15*(1), pp.40-50.

Marcelin, J.R., Siraj, D.S., Victor, R., Kotadia, S. and Maldonado, Y.A., 2019. The impact of unconscious bias in healthcare: how to recognize and mitigate it. *The Journal of infectious diseases*, *220*(Supplement_2), pp.S62-S73.

Marshall, B., Cardon, P., Poddar, A. and Fontenot, R., 2013. Does sample size matter in qualitative research?: A review of qualitative interviews in IS research. *Journal of computer information systems*, *54*(1), pp.11-22.

Martin, S., Iturrate, I., Millán, J.D.R., Knight, R.T. and Pasley, B.N., 2018. Decoding inner speech using electrocorticography: Progress and challenges toward a speech prosthesis. *Frontiers in neuroscience*, *12*, p.422.

Mathur, S.R. and Corley, K.M., 2014. Bringing ethics into the classroom: Making a case for frameworks, multiple perspectives and narrative sharing. *International Education Studies*, *7*(9), pp.136-147.

McCormack, H.M., Horne, D.J.D.L. and Sheather, S., 1988. Clinical applications of visual analogue scales: a critical review. *Psychological medicine*, *18*(4), pp.1007-1019.

Meerschman, I., Van Lierde, K., D'haeseleer, E., Alnouri, G., Burdett, J., Palmer, J., Rose, B., Doucette, P., Paknezhad, H., Ross, J. and Brennan, M., 2024. Immediate and short-term effects of straw phonation in air or water on vocal fold vibration and supraglottic activity of adult patients with voice disorders visualized with strobovideolaryngoscopy: a pilot study. *Journal of Voice*, *38*(2), pp.392-403.

Mertens, D.M., 2019. *Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative, and mixed methods*. Sage publications.

Miles, M. B., & Huberman, A. M., 1994. Qualitative data analysis: A sourcebook of new methods. Sage.

Miller, K.I., 2000. Common ground from the post-positivist perspective: From “straw person” argument to collaborative coexistence. *Perspectives on organizational communication: Finding common ground*, pp.46-67.

Miller, B.A., 2004. Designing compositional tasks for elementary music classrooms. *Research Studies in Music Education*, *22*(1), pp.59-71.

Miller, R., 2009. Voice pedagogy: in the beginning: the genesis of the art of singing. *Journal of Singing-the Official Journal of the National Association of Teachers of Singing*, *66*(1), pp.45-50.

Mills, J., Bonner, A. and Francis, K., 2006. Adopting a constructivist approach to grounded theory: Implications for research design. *International journal of nursing practice*, *12*(1), pp.8-13.

Moon, K. and Blackman, D., 2014. A guide to understanding social science research for natural scientists. *Conservation biology*, *28*(5), pp.1167-1177.

Morgan, D.L., 2013. *Integrating qualitative and quantitative methods: A pragmatic approach*. Sage publications.

Morgan, D.L., 2014. Pragmatism as a paradigm for social research. *Qualitative inquiry*, *20*(8), pp.1045-1053.

Mullings, B., 1999. Insider or outsider, both or neither: some dilemmas of interviewing in a cross-cultural setting. *Geoforum*, *30*(4), pp.337-350.

Myers, M.D., 2019. Qualitative research in business and management.

Nickerson, C., 2022. Interpretivism paradigm & research philosophy. *Simply Sociology*, *5*.

Oliveira, P., Ribeiro, V.V., Florêncio, D.S.F., Palhano, M., Gonçalves, R.R. and do Nascimento, M.A., 2022. Vocal training in healthy individuals: a scoping review. *Journal of Voice*.

Oppenheim, A.N., 2000. *Questionnaire design, interviewing and attitude measurement*. Bloomsbury Publishing.

Ormell, C., 2000. Can action research rebut charges of intrinsic subjectivity and subversivity?. *PROSPERO-WALLINGFORD-*, *6*(3/4), pp.111-122.

Osbeck, L.M., 1993. Social constructionism and the pragmatic standard. *Theory & Psychology*, *3*(3), pp.337-349.

Osborne, J.W., 2008. *Best practices in quantitative methods*. Sage Publishing.

Panhwar, A.H., Ansari, S. and Shah, A.A., 2017. Post-positivism: An effective paradigm for social and educational research. *International Research Journal of Arts and Humanities*, *45*(45), pp.253-259.

Pannucci, C.J. and Wilkins, E.G., 2010. Identifying and avoiding bias in research. *Plastic and reconstructive surgery*, *126*(2), pp.619-625.

Park, Y.S., Konge, L. and Artino Jr, A.R., 2020. The positivism paradigm of research. *Academic medicine*, *95*(5), pp.690-694.

Patton, M.Q., 1990. Qualitative Evaluation and Research Methods, 2nd edn, Newberry Park. *Cal.: Sage Publications, Inc*.

Patton, M.Q., 2002. Qualitative research and evaluation methods. Thousand Oaks. *Cal.: Sage Publications*, *4*.

Portillo, M.P., Rojas, S., Guzman, M. and Quezada, C., 2018. Comparison of effects produced by physiological versus traditional vocal warm-up in contemporary commercial music singers. *Journal of voice*, *32*(2), pp.200-208.

Potter, W.J., 2017. Epistemology. *The international encyclopedia of communication research methods*, pp.1-14.

Powell, T.C., 2001. Fallibilism and organizational research. *Journal of Management Research*, *1*(4), pp.201-219.

Pozzali, I., Pizzorni, N., Ruggeri, A., Schindler, A. and Dal Farra, F., 2024. Effectiveness of semi-occluded vocal tract exercises (SOVTEs) in patients with dysphonia: a systematic review and meta-analysis. *Journal of Voice*, *38*(1), pp.245-e17.

Pratt, D.D., 1998. *Five perspectives on teaching in adult and higher education*. Krieger Publishing Co., PO Box 9542, Melbourne, FL 32902-9542.

Randall, D.M. and Fernandes, M.F., 1991. The social desirability response bias in ethics research. *Journal of business ethics*, *10*, pp.805-817.

Rattray, J. and Jones, M.C., 2007. Essential elements of questionnaire design and development. *Journal of clinical nursing*, *16*(2), pp.234-243.

Regelski, T.A., 1994. Action research and critical theory: Empowering music teachers to professionalize praxis. *Bulletin of the Council for Research in Music Education*, pp.63-89.

Reis, H.T., 2013. Domains of experience: Investigating relationship processes from three perspectives. In *Theoretical frameworks for personal relationships* (pp. 87-110). Psychology Press.

Ridder, H.G., 2017. The theory contribution of case study research designs. *Business research*, *10*, pp.281-305.

Robson, C., 2002. Real World Research 2nd edition. Malden, MA.

Roulston, K., 2006. Mapping the possibilities of qualitative research in music education: a primer. *Music Education Research*, *8*(2), pp.153-173.

Rubin, H.J. and Rubin, I.S., 2011. *Qualitative interviewing: The art of hearing data*. sage.

Ryan, A.B., 2006. Post-positivist approaches to research. *Researching and Writing your Thesis: a guide for postgraduate students*, pp.12-26.

Sataloff, R.T., 1995. G. Paul Moore Lecture. *Journal of Voice*, *3*(9), pp.215-234.

Saunders, M., Lewis, P. and Thornhill, A., 2009. *Research methods for business students*. Pearson education.

Savin-Baden, M. and Major, C., 2023. *Qualitative research: The essential guide to theory and practice*. Routledge.

Schwandt, T., 1994. *Constructivist, Interpretivist Approaches to Human Inquiry. Handbook of Qualitative Research.* Thousand Oaks Sage.

Schwandt, T.A., 2014. *The Sage dictionary of qualitative inquiry*. Sage publications.

Scotland, J., 2012. Exploring the philosophical underpinnings of research: Relating ontology and epistemology to the methodology and methods of the scientific, interpretive, and critical research paradigms. *English language teaching*, *5*(9), pp.9-16.

Scriven, M., 1972, January. The exact role of value judgments in science. In *PSA: Proceedings of the Biennial Meeting of the Philosophy of Science Association* (Vol. 1972, pp. 219-247). Cambridge University Press.

Scriven, M., 1972, January. The exact role of value judgments in science. In *PSA: Proceedings of the Biennial Meeting of the Philosophy of Science Association* (Vol. 1972, pp. 219-247). Cambridge University Press.

Segabutla, M.H. and Evans, R., 2019. Lack of lecturer clarity during instruction: Possible reason for poor throughput?. *South African Journal of Higher Education*, *33*(3), pp.115-131.

Segabutla, M.H. and Evans, R., 2019. Lack of lecturer clarity during instruction: Possible reason for poor throughput?. *South African Journal of Higher Education*, *33*(3), pp.115-131.

Sell, K., 2017. *The disciplines of vocal pedagogy: Towards an holistic approach*. Routledge.

Shapiro, J.P. and Stefkovich, J.A., 2016. *Ethical leadership and decision making in education: Applying theoretical perspectives to complex dilemmas*. Routledge.

Sikes, P.J., 2004. *Doing educational research: A guide to first-time researchers*. Sage Publications.

Smith, J. and Noble, H., 2014. Bias in research. *Evidence-based nursing*, *17*(4), pp.100-101.

Smithson, J., 2000. Using and analysing focus groups: limitations and possibilities. *International journal of social research methodology*, *3*(2), pp.103-119.

Somekh, B., 2006. Somekh, Bridget, Action Research: A Methodology for Change and Development. Maidenhead, Berks, UK: Open University Press, 2006.

Stake, R., 1995. *Case study research*. thousand oaks, CA: Sage.

Stake, R.E., 2008. Qualitative case studies. Sage.

Steane, A.M., 2018. *Science and humanity: a humane philosophy of science and religion*. Oxford University Press.

Steane, A.M., 2018. *Science and humanity: a humane philosophy of science and religion*. Oxford University Press.

Strauss, A. and Corbin, J., 1990. *Basics of qualitative research* (Vol. 15). Newbury Park, CA: sage.

Strosberg, E., 2013. *Art and science*. WW Norton.

Sukamolson, S., 2007. Fundamentals of quantitative research. *Language Institute Chulalongkorn University*, *1*(3), pp.1-20.

Sukamolson, S., 2007. Fundamentals of quantitative research. *Language Institute Chulalongkorn University*, *1*(3), pp.1-20.

Sullivan, W.M., 1986. *Reconstructing public philosophy*. Univ of California Press.

Tashakkori, A., 1998. *Mixed methodology: Combining qualitative and quantitative approaches*. Sage.

Ter, W.S. and Wong, K.Y., 2022. The Effect of Semi-Occluded Vocal Tract Exercise (SOVTE) and Traditional Vocal Warm-up (TVW) on the Vocal Quality of Untrained Female Singers in Malaysia: A Comparison. *Pertanika Journal of Social Sciences & Humanities*, *30*(2).

Tesch, R., 2013. *Qualitative research: Analysis types and software*. Routledge.

Thomas, D.L. and Diener, E., 1990. Memory accuracy in the recall of emotions. *Journal of personality and social psychology*, *59*(2), p.291.

Thornton, A. and Lee, P., 2000. Publication bias in meta-analysis: its causes and consequences. *Journal of clinical epidemiology*, *53*(2), pp.207-216.

Turner, J.R., 2005. The role of pilot studies in reducing risk on projects and programmes. *International Journal of Project Management*, *23*(1), pp.1-6.

Uri, T., 2015. The Strengths and Limitations of Using Situational Analysis Grounded Theory as Research Methodology. *Journal of Ethnographic & Qualitative Research*, *10*(2).

Vaismoradi, M., Turunen, H. and Bondas, T., 2013. Content analysis and thematic analysis: Implications for conducting a qualitative descriptive study. *Nursing & health sciences*, *15*(3), pp.398-405.

Verdolini, K., 1997. Principles of skill acquisition applied to voice training. *The vocal vision: Views on voice*, pp.65-80.

Verdolini-Marston, K. and Balota, D.A., 1994. Role of elaborative and perceptual integrative processes in perceptual-motor performance. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *20*(3), p.739.

Warnick, B.R. and Silverman, S.K., 2011. A framework for professional ethics courses in teacher education. *Journal of teacher education*, *62*(3), pp.273-285.

Watson, P.J. and Hixon, T.J., 1985. Respiratory kinematics in classical (opera) singers. *Journal of Speech, Language, and Hearing Research*, *28*(1), pp.104-122.

Weaver, K. and Olson, J.K., 2006. Understanding paradigms used for nursing research. *Journal of advanced nursing*, *53*(4), pp.459-469.

Wendler, D., 2020. Minimizing risks is not enough: The relevance of benefits to protecting research participants. *Perspectives in biology and medicine*, *63*(2), pp.346-358.

Wheeler, L. and Reis, H.T., 1991. Self-recording of everyday life events: Origins, types, and uses. *Journal of personality*, *59*(3), pp.339-354.

White, P.C., Jennings, N.V., Renwick, A.R. and Barker, N.H., 2005. Questionnaires in ecology: a review of past use and recommendations for best practice. *Journal of applied ecology*, *42*(3), pp.421-430.

Whitehead, J., 1989. Creating a living educational theory from questions of the kind,‘How do I improve my practice?’. *Cambridge journal of Education*, *19*(1), pp.41-52.

Wiles, R., Crow, G., Heath, S. and Charles, V., 2008. The management of confidentiality and anonymity in social research. *International journal of social research methodology*, *11*(5), pp.417-428.

Wilson, J., 2014. Essentials of business research: A guide to doing your research project.

Yin, R.K., 1981. The case study crisis: Some answers. *Administrative science quarterly*, *26*(1), pp.58-65.

Yin, R.K., 2009. *Case study research: Design and methods* (Vol. 5). Sage.