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

INTRODUCTION

I am an opera singer and private voice teacher. In 2021 I began my PhD studies investigating “How the Maltese Language Influences Voice Production and Technique in Classical Singing”. Having come from a performance background, I possessed limited knowledge and experience in carrying out scientific research. This essay aims to remedy this, as I seek to develop a basic understanding of overarching principles of research philosophy. Indeed, it is essential that the researcher is consciously aware of, and understands, the foundations and language of research philosophy (Grix, 2001, 2002).

Separation of terms is difficult as they necessarily interact and converge (Scott, 2024), with some terms defined differently by different authors (Grix, 2002). I will therefore take a “directional” approach (Grix, 2002, p. 179) to discuss research concepts, as highlighted in Figure 1, briefly defining two pillars of research philosophy: ontology, and epistemology. I will then discuss some methodologies, paradigms, theoretical frameworks, methods and ethics, with focus on my potential research interest.

My research interest currently encompasses the relationship between singing resonance, voice acoustics, and articulation in the soprano voice. As a novice practitioner researcher, I wish to grasp a deeper understanding of these concepts and their related tools, to hopefully begin using them in my own practice. An understanding of methodologies provides a strong foundation for research design (Grix, 2001, 2002), in this case, for voice practitioners, who “seek to solve problems encountered within their everyday practice and are therefore best served by the emerging discipline of work-based learning” (Winter, 2020a, p. 3).

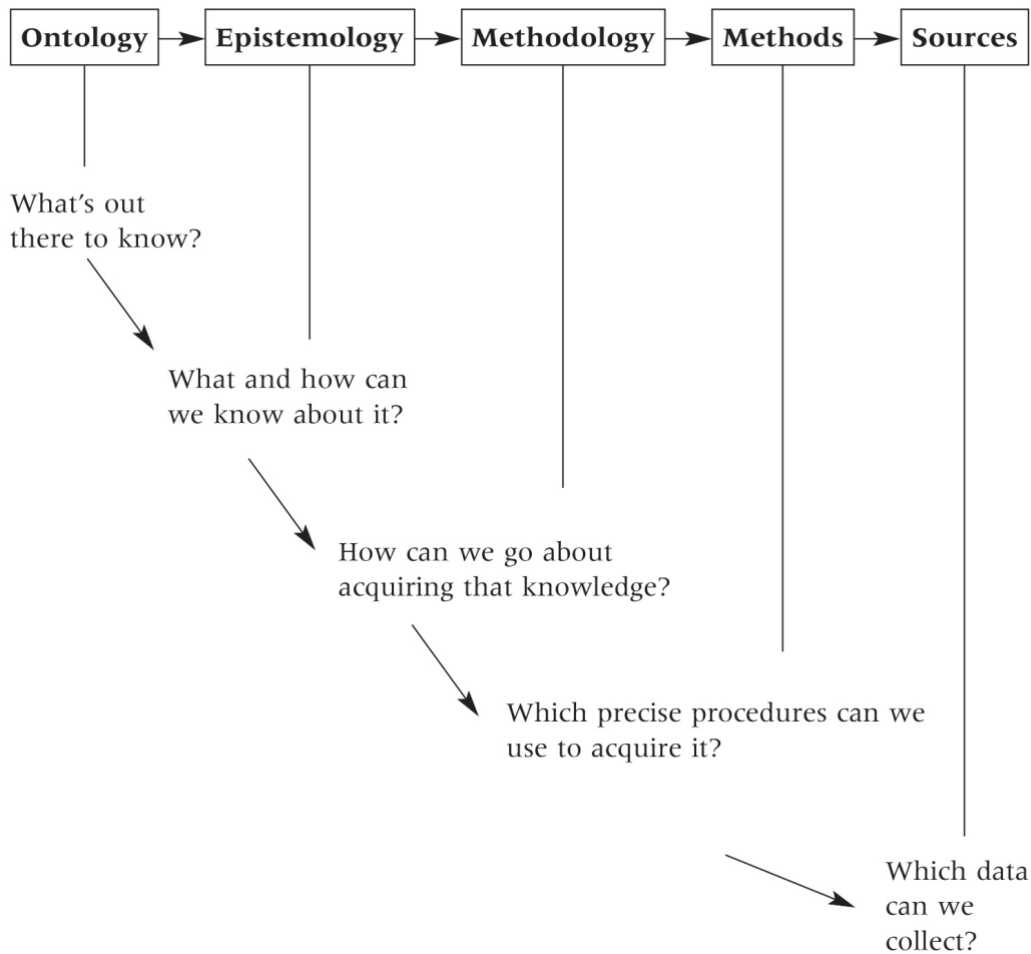


Figure 1. “The interrelationship between the building blocks of research” (Grix, 2002, p. 180; “adapted from Hay, 2002, p. 6”)

RESEARCH PHILOSOPHY

Ontology

Ontology can be referred to as the study of being and concerns itself with “the nature of reality” (Morgan, 2007, p. 57). Reality can be thought of as objective, and truth exists independently (Bryman, 2012); or subjective, which assumes that reality is individual, interpreted, perspective-dependent, “existing only within human thoughts and behaviors” (Williamon et al., 2021 p. 15; Cohen, Manion and Morrison, 2018). For example, one of the most prominent voice researchers (Vos, 2018), Sundberg (1987, p. 157), acknowledges that certain concepts in voice science can be “described in objective, physical terms”; however,

how the singer, and the audience, experiences resonance is defined as “perception”. Similarly, Miller (2008, p. ii) a “pioneer” scientist, singer and voice pedagogue, outlines objectively measurable evidence such as pitch, and the more subjective factors, which Miller (2008, p. iv) refers to as “concepts that imply more or less elaborate forms of integrated behavior” such as “support” and “legato”. My ontological belief is aligned with that of Sundberg and Miller, in that specific phenomenon in singing are independent of the singer, whilst how the singer experiences said phenomenon, is subjective.

Epistemology

While ontology concerns itself with the theory of being, epistemology concerns itself with the theory of knowledge, what is known, and how knowledge is acquired (Bryman, 2012; Williamon et al., 2021; Sol and Heng, 2022). Ontology interacts with epistemology to gather and assess the knowledge in question (Grix, 2001). According to Allsup (2020), there is increased awareness of the importance in understanding epistemology in music education, as without the underpinning knowledge, one may find it difficult to grasp a full range of practices and schools of thoughts. Such knowledge is essential since both the epistemological and ontological approach is influenced by the research question, which in turn influences the methodology, the strategy, and the methods (Williamon et al., 2021; Grix, 2001), and paradigms, thus helping to form a foundation from which to develop congruent research (Winter, 2020b).

RESEARCH PARADIGMS

According to Scott, “a paradigm is the philosophical or theoretical framework underpinning a piece of research” (2024, p. 148), systematically incorporating the researcher’s beliefs and views regarding “ethics, epistemology, ontology, and methodology” (Denzin and Lincoln, 2000; Blaxter, Hughes and Tight, 2010).

Positivism and Post Positivism

Positivists believe that there is one reality and seek an objective and coherent approach to acquiring their truth (ontology) and knowledge (epistemology), thus considering themselves detached from the subjects being researched (Costley, Elliott and Gibbs, 2010). As a novice researcher potentially exploring my own perceptual understanding of singing acoustics with myself as a participant, this approach may not be appropriate for me due to the subjective nature of my research. The positivist researcher usually starts from a hypothesis which they seek to test through research (Scott, 2024; Bryman, 2012; Creswell, 2003), a rationale known as deductive reasoning (Bryman, 2012). According to Hoch (2018), it was the

prominent voice pedagogue, William Vennard, whose scientific experiments and analyses paved the way for voice pedagogy to be explored within a positivist paradigm. Indeed, the year that Vennard (1967) released his book, *Singing: The Mechanism and the Technic*, is often considered by contemporary voice teachers as the defining year separating the “historical era” and “fact-based era pedagogy” (Hoch, 2018, p. 51). Vennard (1967, p. 220) believed that “a knowledge of the mechanism is the foundation of an objective pedagogy”. In 1964, Vennard conducted a repeat experiment which was originally carried out by Wooldridge (1956), to test the presence of nasal resonance. Using X-Ray and recording tools, with cotton wool and solution filling the participants’ nasal passages, Vennard (1964) took on the dual role as researcher and participant. Considering my intention to be a practitioner researcher participant in my own research, I find this particularly interesting and inspiring. Nevertheless one might question the level of objectivity maintained by Vennard as a participant in his own study, a fact which is only very briefly mentioned at the end of the study, thus lacking strong positionality, and lack of clarity pertaining to his own personal experience of the experiment.

Positivism has been gaining popularity in areas of voice science, including physiology and acoustics (Callaghan, 2014), while McCoy notes that “physiologic and acoustic reality has gradually taken precedence over intuition and imagery” (Miller, 2008, p. i). Like positivists, post positivists take a theoretical, objective approach (Williamon et al., 2021). In contrast, post positivists acknowledge that objectivity is challenging due to the influence of already existing theories which might generate bias (Scott, 2024; Costley, Elliott and Gibbs, 2010; Mackenzie and Knipe, 2006). Work based learners sometimes lean into positivist paradigms (Costley, Elliott and Gibbs, 2010), although it is often debated whether the researcher is able to maintain the objectivity and complete “neutrality” required in positivism and post-positivism (Charmaz, 2006, cited Winter, 2020, p. 2; Scott, 2024). Consequently, Winter (2020a) recommends practitioner researchers explore alternative paradigms. Conversely, Scott asserts that the need for objectivity in positivism/ post-positivism may be attractive to practitioners seeking to understand vocal technique (2024). Furthermore, a researcher can maintain objectivity from participants by developing robust methods, whilst giving ethical consideration to their position as an insider researcher (Scott, 2024; Costley, Elliott and Gibbs, 2010; Fleming, 2018).

Constructivism / Interpretivism

Constructivists believe that truth is constructed through relations and communications between individuals (Dempster and Hanna, 2015; Williamon et al., 2021; Costley, Elliott and Gibbs, 2010; Allsup, 2020). The researcher actively forms part of the process, striving to

represent participants' encounters with, and thoughts of, one another (Creswell, 2003; Williamon et al., 2021; Costley, Elliott and Gibbs, 2010). Unlike research conducted within the positivist/ post positivist paradigm, the investigation does not begin with a hypothesis, however a theory is interpreted and formed through the research process, an approach referred to as inductive reasoning (Bryman, 2012). Constructivism also encourages the researcher to seek "meaning via critical reflection" (Winter, 2020a, p. 2). For these reasons, it is considered very appropriate for a voice practitioner researcher (Winter, 2020a, 2020b; Scott, 2024). For example, when looking at belting strategies, Roll (2015) clearly defines her role as a voice practitioner by highlighting the importance of bringing her knowledge and experience into her research, whilst acknowledging potential bias. This strong stance provides a fitting example of the position I would take in my own research as a voice practitioner researcher.

Pragmatism

Pragmatists' primary focus is answering the "research problem" (Creswell, 2009, p. 28), so that their epistemological approach is driven by "what works best" (Williamon et al., 2021, p. 19). Morgan (2007) states that acquiring knowledge is rarely unidirectional, and pragmatism offers a more real-life approach of abductive reasoning, when the researcher alternates between inductive and deductive reasoning. Similarly, Creswell (2009, p. 28) asserts that "pragmatism as a worldview arises out of actions, situations, and consequences", wherein the belief of a single ontological reality is opposed (Creswell, 2003).

Pragmatism works well as a paradigm for work-based learning research (Costley, Elliott and Gibbs, 2010), since practitioner-led inquiry allows the practitioner to develop their own practice through their research (Costley, 2006). Additionally, Winter (2020a), highlights that pragmatism is important for a voice practitioner researcher looking to maintain focus on questions faced during practice. I feel that the flexible approach that pragmatism offers may be ideal for my research exploring the application of theoretical acoustic principles within practice, using the visual feedback of a spectrogram.

RESEARCH METHODOLOGY

Research methodology is the researcher's overarching approach to answer a question and a set of objectives using selected methods (Grix, 2001). Methodology and methods are sometimes mistakenly used interchangeably (Grix, 2001; Mackenzie and Knipe, 2006), but it is important to emphasise the difference, which is that methodology "provides a *strategy*...while a method provides a *tool* for generating knowledge" (Williamon et al., 2021,

p. 48). Methodology can be quantitative, qualitative, or mixed (Creswell, 2003), and this section describes each method, with focus on qualitative methodology.

Qualitative Research Methodology

According to Denzin and Lincoln (2005, p. 3), “qualitative research is a situated activity that locates the observer in the world” so that human ideas, experiences, and relationships are explored, using primarily data that involves text and image (Bryman, 2012; Creswell 2003). Therefore, qualitative research typically focuses on gathering deeper knowledge and experience of fewer participants (Patton, 2002). Research questions tend to be open-ended and answered using the inductive approach, whereby a theory is generated through research (Creswell, 2003, 2009; Bryman, 2012). Creswell (2003) therefore suggests that constructivism is most aligned with qualitative research. Given the nature of this “interpretive endeavor”, the researcher’s awareness and statement of their own ontological position is essential, as it shapes their views and research design (Scheib, 2020, p. 58; Sarkar and Chakrabarti, 2020). For example, researchers studying the experience of a music performer tend towards a subjective position, so a phenomenological framework, which will be discussed in more detail later, allows this view to be fully explored (Holmes and Holmes, 2013).

Quantitative Research Methodology

The researcher using quantitative methodology usually studies the natural sciences, focusing on “testing a theory” using numerically based, statistical data (Bryman, 2012, p. 36) and “standardized measures” (Patton, 2002, p. 14). This methodology has therefore been traditionally viewed as the “scientific or ‘objective’” approach (Blaxter, Hughes and Tight, 2010 p. 64; Punch, 2005; Bryman, 2012). Positivist/ post-positivists align themselves with quantitative methodology as they seek to examine and quantify facts, allowing for the possibility of future projections (Bryman, 2012; Costley, Elliott and Gibbs, 2010; Mackenzie and Knipe, 2006; Williamon et al., 2021; Sol and Heng, 2022).

Mixed Methods Approach

Mixed methods or “multistrategy” is an approach in which both qualitative and quantitative data are used (Williamon et al., 2021, p. 24), by combining, integrating, or mixing approaches (Morgan, 2000). Creswell (2003) encourages using mixed methods as its flexibility allows the researcher to collect data (textual and numerical) according to what works best (Costley, Elliott and Gibbs, 2010; Creswell, 2003; Mackenzie and Knipe, 2006). Ideally aligned with pragmatism, the researcher still needs to justify their choice of methods and data collection, which may be, for example, the inadequacy of one single method within

the social and human sciences (Creswell, 2003), particularly when both methods can be used to complement each other's goal in strengthening the research (Schreib, 2020; Chakraborty, 2020), or when a phenomenon needs to be explored from different angles (Williamon et al., 2021).

As a practitioner researcher potentially doing a study on my own learning practice, my research may require the flexibility that the mixed method approach offers. While it might be broadly qualitative, the extracting and analysing data from a computer programme (Bryman, 2012; Creswell, 2003), specifically a spectrogram (software visualising acoustics (Erickson, 2021), indicates quantitative methods. Further understanding of quantitative methods in voice acoustics is required prior to digging deeper into this methodology.

RESEARCH DESIGNS

A research design refers to the framework outlining the process by which the data is collected and analysed (Bryman, 2012). According to Lincoln and Guba (1985, cited Cohen and Crabtree, 2006) research designs are important as they highlight the “trustworthiness” of a study. This is essential for insider research, which is frequently criticised for its bias (Fleming, 2018). Trustworthiness is recognised using four criteria: credibility, where truthfulness of outcome is assured; transferability, wherein the outcome is applicable to other situations; dependability, presenting dependable results with possibility of replication; and confirmability, which ensures researcher's impartiality. These can be achieved through several techniques, such as triangulation, which involves gathering and comparing data from various sources, and reflexivity, which involves reflecting on one's own background, position within the research, and on any potential bias that may be present (Creswell, 2013).

Case Study

A case study is a detailed investigation of a single case, including “a programme, an event, an activity, a process”, with one or more individuals as participants (Creswell, 2003, p. 15; Costley, Elliott and Gibbs, 2010; Bryman, 2012; Dempster and Hanna, 2015). Although quantitative methodology can be used in case study, qualitative methods is preferred since it allows for more detailed data to be generated (Bryman, 2012, p. 68; Creswell, 2003). Case study is often used by insider researchers since they are well positioned to collect the rich data necessary for the framework (Fleming, 2018). Furthermore, case studies allow the possibility to refine investigative pathways in newer topics with limited available knowledge, for example, difficulties processing music (Barrett, 2020). In voice pedagogy, a case study may be useful in examining the execution of technical exercises. According to Barrett (2020,

p. 74), the popularity of a case study in music education is also due to its “adaptability of its design and process, compatibility with education research, transparency for readers, and pedagogical utility in research education”, and its ability to align well with other frameworks, such as phenomenology, which will be discussed in the next section.

Nevertheless, both Barrett (2020) and Grix (2001) observe the lack of standardisation within the quality of case studies, emphasising the need for more rigor, design and analysis. Notably, the most cited disadvantage of a case study is its lack of generalisability (Barrett, 2020; Brown, 2015; Bryman, 2012). In order to combat this, Bryman (2012, p. 69) highlights the importance of “reliability, replicability and validity”, which according to Creswell (2013, p. 300) is akin to Guba and Lincoln’s (1985) trustworthiness, a “historical” term which is still widely used by qualitative researchers. For example, Creswell (2013, p. 300) suggests reflexivity and positionality as a validation strategy for case study research. Additionally, Stake (1995, p. 109) states that we have “ethical obligations to minimize misrepresentation and misunderstanding”, presenting a checklist (see Appendix I) which case study researchers might use to strengthen their work.

Phenomenology

A phenomenon is “an existing thing” (Cambridge Dictionary, 2019) or “lived experience”, of an individual or a group of individuals (Patton, 2002, p. 104; Creswell, 2013). For example, in voice pedagogy, this might refer to opera singers’ experiences of using resonance strategies. Within a framework of phenomenology, the researcher is interested in obtaining a deep understanding of the participant’s consciously perceived experience of a phenomenon (Williamon et al., 2021; Hourigan and Edgar, 2020; Costley, Elliott and Gibbs, 2010). Therefore, phenomenology is a prevalent choice in music education research (Scheib, 2020; Hourigan and Edgar, 2020), as it allows the researcher to understand the subjective world of the performer” (Holmes and Holmes, 2013, p. 73; Costley, Elliott and Gibbs, 2010). Furthermore, it is “good at exposing limitations in current thinking, action or policies, developing widened or alternative perspectives and testing complex systems” (Costley, Elliott and Gibbs, 2010, p. 87).

More than in other qualitative frameworks, the researcher must strive to be objective in their interpretation and description (Williamon et al., 2021). While for this reason, phenomenology might be regarded as unsuitable for an insider-researcher, the researcher’s knowledge has recently been considered beneficial, and bias can be avoided using “reflexivity (self-reflection) and acknowledgement of insider status” (Scott, 2024, p. 152; Hourigan and Edgar, 2020). This is well exemplified in Paparo’s (2022) phenomenological study observing a singer’s experience with the Feldenkrais method, in which the researcher

recognises his experience with Feldenkrais as being advantageous, whilst acknowledging difficulty in remaining objective.

RESEARCH METHODS

Since methods are justified by the methodology (Sarkar and Chakrabarti, 2020), a researcher following a qualitative methodology will usually focus on methods that allow for textually based data collection, while methods collecting numerical data tend to be used in quantitative methodology.

Observations

Observations are considered a principal method used in qualitative research to deeply explore an occurrence, an experience, or a situation (Sen, 2020). This would be relevant for my own research where I observe my own practice in the dual role of researcher and participant. The dual role is referred to as participant observation, and according to Patton (2002, p. 260), the researcher needs to be trained “to become a skilled observer” by, for example: concentrating during their observational process; mastering their note-taking skills; understanding which descriptions provide most value; and practising positionality and reflexivity. Additionally, Williamon et al., (2021) suggests including audio/video recordings of participants, with their permission, as part of the field notes. These skills are essential for teachers carrying out research in the workplace, as they help to prevent potential criticism regarding reliability, since it is common to unintentionally alter events and experiences in the process of remembering and reflecting upon them (Bartlett, 1932, cited Williamon et al., 2021). Observations may also be semi-structured, when the researcher observes from the outside but retains flexibility (Williamon et al., 2021). This is exemplified by Ginsborg’s (2002) study on memorisation techniques used by classical singers within a non-experimental quantitative strategy. When the researcher seeks objectivity and detachment without straying from the initial plan, the observations are structured, although this is more commonly found within quantitative methodology (Williamon et al., 2021).

Documentation

Often combined with observation, documentation presents an important assessment of participants’ actions, thoughts, “experiences, beliefs, and feelings” (Williamon et al., 2021, p. 109). Documentary data can come in three forms: documents already in existence; documents produced for the purpose of research, which can be written or recorded with audio, video, or audiovisual; and as “drawings and other forms of visual representation” (Williamon et al., 2021, p. 109). Documentation may include material presented to

participants, to help as “stimuli” to motivate a response, or “documentary data” which is evaluated by the researcher (Williamon et al., 2021, p. 109). Like observations, documentation works well with qualitative, quantitative and mixed methodologies; however, while observations focus on selected material created by the researcher and their process of research, documentation evaluates material created by others (Williamon et al., 2021). In voice pedagogy, documentation may include sheetmusic and computer/mobile software, such as VoceVista, which Scott McCoy refers to as “a singer friendly voice analysis program”, developed by Miller (2008).

ETHICS AND INSIDER RESEARCH

Ethics is “the study of morals or rules of behaviour, while research ethics are standardised rules that guide the design and conduct of research” to safeguard the welfare of those being researched while protecting the researcher from liability (Dempster and Hanna, 2015, p. 33). Moreover, research ethics are essential in maintaining rigorous research practice (Bryman, 2012), and must underpin every phase undergoing constant review (Matsunobu and Bresler, 2020; Williamon et al., 2021). The “guiding principles on which ethical codes are based can be summarised as follows: people should not be harmed, nor their rights and dignity compromised, and research must be of scientific value and carried out with integrity” (Williamon et al., 2021, p. 57). Scott cautions that “ethical challenges are not always obvious”, and that consent needs to be sought, and attention needs to be given to how it is sought, with consideration of “confidentiality and security of data, researcher control, [and] withdrawal procedure” (2024, p. 157). Guidance should be sought when any doubt as to the procedures is present (Scott, 2024; Robbins, 2020).

In a work-based learning context, an insider researcher undertakes research related to their work while being immersed within it (Costley, Elliott and Gibbs, 2010). Work based learning “engages the learner in problem solving and enhances the skills of inquiry, networking and creativity” (Moore, 2007, p. 161). As a practitioner researcher, I am aware that my potential project would require specific ethical considerations. For example, I would need to consider the potential effects it may have on my own psychological wellbeing. This could be counteracted by focusing on the journey of my learning process, not on the results, thereby limiting the pressure on myself. I could also avail myself of the wellbeing services offered by the university. Whilst the insider knowledge and experience I possess as a singer may be beneficial for the research, I would need to state my positionality, clarifying that I am conscious of the insider bias as a practitioner researching my own work, and the potential influence it might have on the research. To this end, reflexivity will be essential to mitigate any criticism of bias, both as a participant, and as a researcher towards my own research. To

strengthen the study and ensure trustworthiness, I might organise sessions with a mentor who already possesses experience in spectrogram use. Thus, several considerations would need to be made when filling in the ethics form to be submitted to the university, and only once approval is granted, could the research process begin.

CONCLUSION

Through this essay, I have begun to develop an understanding of research philosophy and discussed some concepts potentially useful for my research. One of my main goals is to grasp concepts and develop a basic understanding and insight of spectrogram use, therefore improving my repertoire of tools as a singer and teacher. As a participant learner, I might use case study design within a pragmatic paradigm to allow for flexibility in mixed methods. While subjectivity is inherent in practitioner research and necessitates the use of qualitative methods, the spectrogram is a quantitative method, and numerical data would contribute towards the project's rigour and validity. The theoretical framework might be phenomenological since I would be studying the phenomenon of a lived experience, that is practice using a spectrogram. Methods might include observation, with strong reflexivity to avoid bias, documentation, journalling, and audiovisual material. In conclusion, while I have put forward some potential research design ideas, I acknowledge the need to seek a deeper understanding of methodologies and review more literature. Only from there, will I be able to fully form a research design, with all ethical considerations taken into account.

Appendix I

Critique Checklist for a Case Study Report						
1. Is this report easy to read?	Very	☐	So-so	☐	Hard	☐
2. Does it fit together, each sentence contributing to the whole?	Very	☐	So-so	☐	Misfit	☐
3. Does this report have a conceptual structure (i.e., themes or issues)?	Yes	☐	A little	☐	None	☐
4. Are its issues developed in a serious and scholarly way?	Yes	☐	A bit	☐	None	☐
5. Is the case adequately defined?	Yes	☐	So-so	☐	Poorly	☐
6. Is there a sense of story to the presentation?	Strong	☐	Some	☐	None	☐
7. Is the reader provided some vicarious experience?	Yes	☐	A bit	☐	None	☐
8. Have quotations been used effectively?	Yes	☐	A bit	☐	No	☐
9. Are headings, figures, artifacts, appendixes, indexes effectively used?	Very	☐	So-so	☐	No	☐
10. Was it edited well, then again with a last minute polish?	Shiny	☐	Nicks	☐	Rough	☐
11. Has the writer made sound assertions, neither over- or underinterpreting?	Yes	☐	So-so	☐	No	☐
12. Has adequate attention been paid to various contexts?	Yes	☐	A little	☐	None	☐
13. Were sufficient raw data presented?	Loads	☐	So-so	☐	Weak	☐
14. Were data sources well chosen and in sufficient number?	Strong	☐	Some	☐	Weak	☐
15. Do observations and interpretations appear to have been triangulated?	Yes	☐	A bit	☐	No	☐
16. Is the role and point of view of the researcher nicely apparent?	Nicely	☐	A bit	☐	None	☐
17. Is the nature of the intended audience apparent?	Yes	☐	Some	☐	No	☐
18. Is empathy shown for all sides?	Yes	☐	A bit	☐	No	☐
19. Are personal intentions examined?	Yes	☐	A bit	☐	No	☐
20. Does it appear individuals were put at risk?	Yes	☐	A bit	☐	No	☐

Figure 1. Case study checklist to help the researcher strengthen their study (Stake, 1995, p. 131).

References

- Allsup, R. E. (2020) 'Epistemology and qualitative research in music education', in C.M. Conway (ed.) *The Oxford handbook of qualitative research in American music education*. New York: Oxford University Press, pp. 37-55.
- Barrett, J. R. (2020) 'Case study in music education' in C.M. Conway (ed.) *The Oxford handbook of qualitative research in American music education*. New York: Oxford University Press, pp. 74-93
- Blaxter, L., Hughes, C. and Tight, M. (2010) *How to research*. 4th edn. Maidenhead: Open University Press.
- Brown, N. (2015) *Action research or case study?* Available at: <https://www.nicole-brown.co.uk/action-research-or-case-study/> (Accessed: 5 July 2024).
- Bryman, A. (2012) *Social Research Methods*. 4th edn. Oxford: Oxford University Press.
- Cambridge Dictionary (2019) *Phenomenon*. Available at: <https://dictionary.cambridge.org/dictionary/english/phenomenon> (Accessed: 19 August 2024).
- Chakraborty, A. (2020) 'Methodological or epistemological issues in social research', in R. Acharyya and N. Bhattacharya (eds) *Research methodology for social sciences*. New York: Routledge, pp. 9-23.
- Cohen, L., Manion, L. and Morrison, K. (2018) *Research methods in education*. 8th edn. New York: Routledge.
- Cohen, D and Crabtree, B. (2006) *Qualitative research guidelines project*. Available at: <http://www.qualres.org/HomeLinc-3684.html> (Accessed: 18 August 2024).
- Conway, C., Eros, J., Pellegrino, K. and West, C. (2010) 'The role of graduate and undergraduate interactions in the development of preservice music teachers and music teacher educators: a self-study in music teacher education', *Bulletin of the Council for Research in Music Education*, 183, pp. 49–64. Available at: <https://www.jstor.org/stable/27861472> (Accessed: 5 July 2024).
- Cook, T.D. and Campbell, D.T. (1979) *Quasi-experimentation*. Boston: Houghton Mifflin.

- Costley, C. (2006) 'Practitioner-led enquiry as development of professional practice', *Professional lifelong learning: beyond reflective practice*, University of Leeds, 3 July 2006. Available at: [https://www.academia.edu/29122016/Practitioner led enquiry as development of professional practice](https://www.academia.edu/29122016/Practitioner_led_enquiry_as_development_of_professional_practice) (Accessed 16 August 2024).
- Costley, C., Elliott, G. and Gibbs, P. (2010) *Doing work based research: approaches to enquiry for insider-researchers*. London: Sage Publications.
- Creswell, J.W. (2003) *Research design: qualitative, quantitative, and mixed methods approaches*. 2nd edn. London: Sage Publications.
- Creswell, J.W. (2009) *Research design: qualitative, quantitative, and mixed methods approaches*. 3rd edn. New Delhi: Sage Publications.
- Creswell, J.W. (2013) *Qualitative inquiry and research design: choosing among five approaches*. 3rd edn. Thousand Oaks: Sage Publications.
- Dempster, M. and Hanna, D. (2015) *Research methods in psychology for dummies*. New York: John Wiley Et Sons.
- Denzin, N.K. and Lincoln, Y.S. (2005) 'Introduction: the discipline and practice in qualitative research', in *The Sage handbook of qualitative research*. 3rd edn. Thousand Oaks: Sage Publications, pp. 1-32.
- Erickson, H. (2021) 'Teachers of singing mobile apps and biofeedback in voice pedagogy', *Journal of Singing*, 77(4), pp. 485–500. Available at: https://www.nats.org/Library/JOS_On_Point/JOS_077_04_2021_485.pdf (Accessed: 5 July 2024).
- Fleming, J. (2018) *Recognizing and resolving the challenges of being an insider researcher in work-integrated learning*. Available at: <https://files.eric.ed.gov/fulltext/EJ1196753.pdf> (Accessed: 19 July 2024).
- Frymier, A.B. and Houser, M.L. (2000) 'The teacher-student relationship as an interpersonal relationship', *Communication Education*, 49(3), pp. 207–219. Available at: <https://doi.org/10.1080/03634520009379209> (Accessed 28 June 2024).

- Ginsborg, J. (2002) 'Classical singers learning and memorising a new song: an observational study. *Psychology of Music*, 30(1), pp. 58–101. Available at: <https://doi.org/10.1177/0305735602301007> (Accessed 21 July 2024).
- Grix, J. (2001) *Demystifying postgraduate research: From MA to PhD*. Birmingham: University of Birmingham Press.
- Grix, J. (2002) 'Introducing students to the generic terminology of social research', *Politics*, 22(3), pp. 175–186. Available at: <https://doi.org/10.1111/1467-9256.00173> (Accessed 26 June 2024).
- Holmes, P. and Holmes, C. (2013) 'The performer's experience: A case for using qualitative (phenomenological) methodologies in music performance research', *Musicae Scientiae*, 17(1), pp. 72–85. Available at: <https://doi.org/10.1177/1029864912467633> (Accessed 5 August 2024).
- Hourigan, R.M. and Edgar S.N. (2020) 'Phenomenological research in music Education', in C.M. Conway (ed.) *The Oxford handbook of qualitative research in American music education*. New York: Oxford University Press, pp. 110-124.
- Kuhn, T.S. (1962) *The Structure of Scientific Revolutions*. 2nd edn. Chicago: University of Chicago Press. Available at: <https://www.lri.fr/~mbl/Stanford/CS477/papers/Kuhn-SSR-2ndEd.pdf> (Accessed 2024).
- Mackenzie, N. and Knipe, S. (2006) *Research dilemmas: paradigms, methods and methodology*. Available at: <https://www.iier.org.au/iier16/mackenzie.html> (Accessed 28 June 2024).
- Matsunobu K, and Bresler, L. (2020) Qualitative research in music education: concepts, goals, and characteristics', in C.M. Conway (ed.) *The Oxford handbook of qualitative research in American music education*, pp. 1-19.
- Miller, D.G. (2008) *Resonance in singing: voice building through acoustic feedback*. Princeton, NJ: Inside View Press.
- Moore, L.J. (2007) 'Ethical and organisational tensions for work-based learners', *Journal of Workplace Learning*, 19(3), pp.161–172. Available at: <https://doi.org/10.1108/13665620710735639> (Accessed 5 July 2024).

Morgan, D.L. (2007) 'Paradigms lost and pragmatism regained: methodological implications of combining qualitative and quantitative methods', *Journal of Mixed Methods Research*, 1(1), pp. 48–76. Available at: <https://journals.sagepub.com/doi/10.1177/2345678906292462> (Accessed 5 July 2024).

Paparo, S.A. (2022) 'Singing with awareness: a phenomenology of singers' experience with the Feldenkrais Method', *Research Studies in Music Education*, 44(3), pp. 541–553. Available at: <https://doi.org/10.1177/1321103x211020642> (Accessed 20 July 2024).

Patton, M.Q. (2002) *Qualitative Research & Evaluation Methods*. Thousand Oaks: Sage Publications.

Punch, K.F. and Oancea, A. (2014) *Introduction to research methods in education*. London: Sage Publications.

Robbins, J. (2020) 'Practitioner enquiry', in C.M. Conway (ed.) *The Oxford handbook of qualitative research in American music education*. New York: Oxford University Press, pp. 148-170.

Roll, C. (2016) 'The evolution of the female Broadway belt voice: implications for teachers and singers', *Journal of Voice*, 30(5), pp. 639.e1–639.e9. Available at: <https://doi.org/10.1016/j.jvoice.2015.07.008> (Accessed 29 June 2024).

Sarkar S. and Chakrabarti, A. (2020) 'Diversity in economics: an examination and defence of heterodox approach', in Acharyya, R. and Bhattacharya, N. (eds) *Research methodology for social sciences*. New York: Routledge, pp. 57-88.

Scheib, R.E. (2020) 'Epistemology and qualitative research in music education', in C.M. Conway (ed.) *The Oxford Handbook of Qualitative Research in American Music Education*. New York: Oxford University Press, pp. 56-73.

Scott, S. (2024) Insights, Considerations, and Suggestions for the Practitioner-Researcher in Voice Studies. *Voice and Speech Review*, 18(2), pp. 146-165. Available at: <https://doi.org/10.1080/23268263.2022.2137972> (Accessed 5 July 2024).

Sen, S. (2020) 'Towards a pragmatic centre: debates on qualitative methodology', in Acharyya, R. and Bhattacharya, N. (eds) *Research methodology for social sciences*. New York: Routledge, pp. 27-43.

Sol, K. and Heng, K. (2022) 'Understanding epistemology and its key approaches in research', *Cambodian Journal of Educational Research*, 2(2), pp. 80–99. Available at: <https://doi.org/10.62037/cjer.2022.02.02.05> (Accessed 5 July 2024).

Stake, R.E. (1995) *The art of case study research*. London: Sage Publications. Available at: <https://archive.org/details/artofcasestudyre0000stak/page/131/mode/1up?view=theater> (Accessed 19 August 2024).

Sundberg, J (1987) *The science of the singing voice*. DeKalb, Illinois: Northern Illinois University Press.

Vennard, V (1964) 'An experiment to evaluate the importance of nasal resonance in singing', *Folia Phoniatr Logop*, 16 (2): 146–153. Available at: <https://doi.org/10.1159/000262995> (Accessed 20 August 2024).

Vennard, W. (1967) *Singing: the mechanism and the technic*. New York: Carl Fischer.

Vos, R.R. (2018) *Resonance tuning in professional operatic sopranos*. PhD thesis. University of York. Available at: <https://etheses.whiterose.ac.uk/23154/> (Accessed 5 July 2024).

Williamon, A., Ginsborg, J., Perkins, R. and Waddell, G. (2021) *Performing music research: methods in music education, psychology, and performance science*. Oxford: Oxford University Press.

Winter, D. (2020a) 'Understanding research methods: from singing teacher to practitioner researcher'. Available at: <https://doi.org/10.13140/RG.2.2.16046.13122> (Accessed 29 June 2024).

Winter, D. (2020b) 'Voicing a practitioner research methodology: further framing the conversation', *Voice and Speech Review*, 15(1), pp. 76-88. Available at: <https://doi.org/10.1080/23268263.2020.1843270> (Accessed 3 July 2024).