

BMPF7005: Undertaking Research in Work Places

A critical evaluation of methodological approaches, research designs, research methods and ethical considerations for gathering data in work based settings.

Sarah Martin

2244162

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Glossary of Terms

Abductive	Abductive reasoning attempts to infer logical conclusions through the consideration of many observations and findings, and selecting the best or most probable to form the basis of a new theory, or modify an existing one (Mitchell, 2018).
Deductive	Deductive Reasoning, or a deductive approach, refers to a form of data analysis, which begins with the proposal of a hypothesis. This is then confirmed or rejected, based upon the findings presented in the statistical analysis (Rehman and Alharthi, 2016).
Inductive	An inductive approach to data analysis involves the collection of data from which facts are drawn and theories or concepts are then built. Generalisations are born from specific findings (Gray, 2009, p. 577).
Methodology	Methodology can be defined as “the analysis of, and the broad philosophical and theoretical justification for, a particular method used in research” (Gray, 2009, p.578).
Qualitative	A Qualitative methodology aims to uncover meaning and perspectives in human experiences. It produces data that is verbal or text-based. Quantitative methods are useful for generating new theories as opposed to confirming a hypothesis (Bell, 2010, pp.5–26).
Quantitative	A Quantitative methodological design seeks to investigate truth and confirmation of fact through the incorporation of experimental methods that are objective, measurable and replicable (Gray, 2009, pp.131-163). The data produced by quantitative

	research is often numerical and statistical (Bell, 2010, pp.5–26).
Reflexivity	Reflexivity is the process of reflection in which a researcher must continually review their philosophical position to determine and declare any unconscious bias that they may have as a result of personal experience relating to the study or the participants (Dodgson, 2019).
Triangulation	Triangulation is defined as the process in which multiple methods or data sources are used to “develop a comprehensive understanding of phenomena” (Patton, 1999, cited in Carter <i>et al.</i> , 2014). It may also be used as a strategy for testing validity through combining information from a variety of sources (Carter <i>et al.</i> , 2014).

Introduction

Work-based research has been shown to provide a positive contribution to the improvement of practices within the workplace (Costley, Elliott and Gibbs, 2010). Voice researchers are often committed to the development of their work, aiming to solve problems within their practice through research, to which work-based learning can be a valuable tool (Winter, 2020). However, the nature of work-based research requires moral and ethical considerations to ensure all stakeholders are positively impacted (Costley, Elliott and Gibbs, 2010). Such considerations include having an understanding of the ideologies that may underpin research design and a clear justification for the most appropriate methodologies to fulfil research aims (Costley, Elliott and Gibbs, 2010). This paper will critically discuss key philosophical frameworks, methodologies, methods and ethical considerations in preparation for undertaking my own work-based research project in the near future. It aims to cover in detail the paradigms, methodologies and ethical considerations that appear most relevant to my work as a voice practitioner within the educational sphere. However, to provide a broader scope, additional methodologies and ethical considerations have been analysed in Appendix 1.

Ontology and Epistemology

Grix, (2019, pp.51–77) summarises ontology as the foundation of research. Ontology is based upon one's perspective on what constitutes reality (Blaikie, 2000, cited in Grix, 2019, pp.51–77) and can be defined as “the study of being” (Gray, 2009, pp.16–20). There are two main ontological positions: the “relativist” position (Levers, 2013), in which reality is ever-changing and in-flux (Cisney, n.d.; Gray, 2009, pp.16–20), and the “realist” position (Crotty, 1998, pp.1–17), in which reality is thought to be fixed and unchangeable, existing independently of human perception (Cisney, n.d.; Gray, 2009, pp.16–20). A researcher's ontological position explains what they believe exists, or “what is” (Gray, 2009, pp.16–20).

Closely linked to Ontology, Epistemology is the theory of knowledge itself; what constitutes knowledge and what it means to know (Crotty, 1998, pp.1–17; Gray, 2009, pp.16–20; Trivedi, 2020). Within the philosophy of epistemology, there are three common positions: “Objectivism”, in which reality is believed to be independent from human consciousness (Gray, 2009, pp.16–20); “Constructivism”, which maintains the idea that a singular, independent reality does not exist, but instead, reality is “constructed” through one's own interactions with the world (Ültanır, 2012), and “Subjectivism”, a position in which reality and

knowledge exist, but are determined by the human interpretation of experiences and beliefs (Levers, 2013). A researcher's beliefs surrounding what makes knowledge legitimate and tangible will determine their choices of methodological approach (Maynard, 1994, cited in Crotty, 1998, pp.1-17).

There are conflicting opinions on the importance of how in-depth a researcher must understand their own ontological and epistemological positions prior to designing research. For example, Grix (2019, pp. 51-77) states that a clear understanding of different ontological positions is imperative, allowing researchers to justify their own position and recognise the positions of other scholars. This enables the researcher to more easily identify potential biases or internal inconsistencies, and interpret competing approaches in other sources (Lewis 2002, cited in Grix, 2019, pp. 51-77). Whilst Clough and Nutbrown (2012) agree that acknowledgement of your position is important for justification of the research design, they are less in favour of conforming to one rigid paradigm, and argue that this may be restrictive when choosing the most appropriate methodologies for fulfilment of the research question. They further claim that it is not necessary or appropriate for researchers to always fully elaborate on their philosophical position, as the methodology should justify and clarify any assumptions that may have influenced the research design. Grix (2019 pp. 51-77) criticises the work of Clough and Nutbrown (2012) by arguing against the idea that researchers can have flexibility in their positionality, as many combinations of ontologies and epistemologies are not logical, and therefore should not be "chopped and changed". Rehman and Alharthi (2016) dispute this idea, claiming that strictly conforming to one paradigm may result in an ignorance towards other approaches, making research conducted through other theoretical perspectives difficult to appraise.

These contrasting opinions highlight that research philosophy can often be explained inconsistently across the literature. The debate amongst scholars on how many positions one can take, the validity of each approach and the need for awareness of one's own position is ongoing (Walliman, 2005, pp.334–369). Furthermore, philosophical terminology can often be defined differently within different sources, sometimes in contradictory ways (Crotty, 1998, pp.1-17). It could be argued that the conflicting literature surrounding theoretical perspectives is potentially confusing or misleading to novice researchers as to how much they should reflect on their own positionality before undertaking a research project, if at all. However, despite this being difficult to navigate, Rehman and Alharthi (2016) defend the importance of having an ability to deduce the assumptions stemming from different theoretical frameworks in the research of others, to ensure relevance and validity of sources. In many instances, researchers do not make their position explicit, however, it is

important that evidence of a theoretical perspective can be interpreted within a study (Rehman and Alharthi, 2016). This suggests that before undertaking research, it is important to consider what underlying theoretical positions may influence the research design (Grix, 2019, pp.51–77), as this will justify and make clear any prior assumptions brought to the methodology (Crotty 1998, pp,1-17).

Paradigms

Ontological and epistemological positions, combined with methodology, form the research paradigm (Guba and Lincoln, 1994). A paradigm is defined as a theoretical framework that forms the philosophical motivation behind undertaking research (Mackenzie and Knipe, 2006). The researcher's paradigm will influence each part of the research process, from the methods and sources selected, through the way in which data is analysed (Feilzer, 2010). Some scholars also consider "Axiology" to be an important pillar of a research paradigm (Morgan, 2007). Axiology can be defined as the consideration of values to inform ethical decisions in research (Kivunja and Kuyini, 2017). Traditionally, axiology is more closely associated under the branch of "ethics" and opposed to knowledge philosophy (Morgan, 2007). Regardless, Creswell (1998, cited in Morgan 2007) emphasises the importance of moral consideration, especially within qualitative research. The list of existing paradigms is extensive, however, some of the most prominent include Positivism, Interpretivism/Constructivism and Pragmatism (Kivunja and Kuyini, 2017).

Positivism

Positivism is based upon a realist ontology and an objectivist epistemology, in which it is believed that there is a singular reality, independent of human experience (Rehman and Alharthi, 2016). Positivism is grounded in scientific methods of research, and researchers rooted in this position strive to apply the same methodologies used to determine the objective truth in physical sciences to social sciences (Mackenzie and Knipe, 2006; Rehman and Alharthi, 2016; Kivunja and Kuyini, 2017). Therefore, positivist research is rooted in quantitative research methods that typically produce numerical forms of data with the aim of uncovering objective truth through the testing of a hypothesis to confirm or reject a theory, also known as "deductive reasoning" (Guba and Lincoln, 1994; Kivunja and Kuyini, 2017; Rehman and Alharthi, 2016). Quantitative methods such as true experiments, quasi-experiments, surveys using closed-ended questionnaires and other standardised tests are favourable due to their objectivity, replicability and alignment with positivist values (Rehman and Alharthi, 2016).

Positivism: Benefits and Limitations

The positivist paradigm is increasing in popularity within voice-based research, as the study of anatomy and application of voice science to inform singing pedagogy is more prevalent than ever (Winter, 2020). The positivist emphasis on validity and reliability may be very appealing to voice practitioners that value scientific methods to answer practice-based questions (Guba and Lincoln, 1994; Winter, 2020). However, criticisms of positivism highlight that methods for testing the natural sciences are not always appropriate for investigating social phenomena within voice pedagogy, such as professional artistry (Rehman and Alharthi, 2016; Winter, 2020). The requirement for objectivity, defined as the need for a “distanced and neutral observer” (Guba and Lincoln, 1994) is often difficult for voice researchers to navigate, as the majority of practitioners are “insider researchers”, heavily immersed in their own practice (Winter, 2020).

Post-Positivism

Criticisms of the limitations of positivism led to the development of post-positivism. Like positivism, this paradigm has scientific methods at its core, but has an ontological position of critical realism, acknowledging that the study of human behaviour is too complex to disregard how the values and beliefs of the researcher may affect outcomes (Rehman and Alharthi, 2016). It recognises the limitations of objectivity, as the perspective of an observer can never be fully independent of their observations (Crotty, 1998, pp. 29–31). Although post-positivism acknowledges how difficult objective enquiry can be in certain contexts (Winter, 2020), the need for distance and neutrality remains, which may be conflicting for voice pedagogues acting as insider researchers (Guba and Lincoln, 1994; Winter, 2020).

Interpretivism

Interpretivism is formed from a relativist ontology and subjectivist epistemology (Levers, 2013). Within interpretivism, there is a greater emphasis placed on “understanding” as opposed to “explaining”, due to the interpretivist viewpoint that reality is constructed, and is not independent of human experience (Grix, 2019, pp. 51-77). For this reason, this paradigm is sometimes referred to as the “Constructivist” paradigm (Kivunja and Kuyini, 2017). Interpretivists aim to understand social phenomena through the perspective of the participant (Rehman and Alharthi, 2016). Contrasting with the positivist perspective, interpretivists believe that social sciences are separate from physical sciences, and therefore, qualitative methodologies are often more appropriate (Grix, 2019, pp. 51-77). This may include

unstructured interviews or observations, from which findings are analysed with an inductive approach from which new theories are built (Rehman and Alharthi, 2016; Winter, 2020).

Interpretivism: Benefits and Limitations

The interpretivist paradigm is often considered to be most appropriate for investigating social sciences, as paradigms that deal predominantly with quantitative methods are not designed to delve into the complex nature of human experiences (Rehman and Alharthi, 2016). Winter (2020) suggests that this paradigm may therefore be appropriate for the “artistic endeavours” of the voice pedagogue due to its values on human perspective. However, criticisms of interpretivism emphasise the complex nature of subjectivity, which many scholars believe is more likely to produce inconsistent or uncertain findings, as opposed to complete and objectifiable results (Grix, 2019, p.76). However, it is argued that interpretivist research can be deemed as trustworthy if there is transparency of positionality and justification of methodological choices increases the integrity of interpretivist research (Guba and Lincoln 1994; Rehman and Alharthi, 2016).

Pragmatism

Although many paradigms do not conform to one methodology, Pragmatism is the paradigm most commonly associated with a mixed-methods approach (Feilzer, 2010; Mackenzie and Knipe, 2006). A “Mixed-Method” research design incorporates both qualitative and quantitative methods (Gray, 2009, pp. 199-200) (see section titled “Methodology”). The pragmatic viewpoint does not conform to one set ontological or epistemological stance, but proposes that reality consists of multiple layers that may be interpreted as objective and subjective based on what is most useful to solving the research problem (Creswell, 2009; Feilzer, 2010). Therefore, pragmatism approaches the use of mixed-methods from a “problem-solving” position, proposing that researchers should utilise the methods that are most appropriate to their investigation (Tashakkori and Teddlie, 1998, cited in Kaushik and Walsh, 2019). New or existing theories are generated or modified through abductive reasoning, as this aims to provide the most logical prediction of the truth (Mitchell, 2018).

Pragmatism: Benefits and Limitations

Whilst pragmatism may benefit researchers by providing flexibility from the restraints of other paradigms (Feilzer, 2010), criticisms highlight that researchers may choose to align with pragmatism on the basis of “practicality over principles” (Hampson and McKinley, 2023). This presents a risk of allowing researchers to reject findings that do not align with their desired

result, or on the basis of convenience rather than values (Hampson and McKinley, 2023). One argument against pragmatism is that flexibility of philosophical position can lead to a lack of clarity in the research (Grix, 2019, pp. 51-77). Feilzer (2010), in support of pragmatism, claims that a high degree of reflexivity ensures validity and integrity.

Considerations for Establishing Your Paradigm

One's paradigmatic viewpoint is the foundation for establishing assumptions of ontology and epistemology, and how these have a direct impact on research design, including methodology, methods and data analysis (Feilzer, 2010). However, the literature debating the benefits and limitations of each paradigm throughout history is vast, with no way of establishing the full truth (Guba and Lincoln, 1994). It is also important to consider the probability that criticisms of each paradigm could derive from scholars with opposing viewpoints (Rehman and Alharthi, 2016). For example, criticisms of positivism originating from interpretivists, and so on. Despite these challenges, much of the literature suggests that establishing a positionality and paradigm in some form provides a framework from which research design choices can be justified, increasing the integrity of research.

Methodology

Easterby-Smith, Thorpe and Jackson (2015) emphasise the important link between ontology, epistemology and methodology, in that methodology and methods are built upon the foundations of an inner theoretical core (Appendix 2). Methodology can be defined as "the analysis of, and the broad philosophical and theoretical justification for, a particular method used in research" (Gray, 2009, p.578). "Methods" refers to the systematic approach in which data is collected to generate information towards the fulfilment of the research problem (Gray, 2009, p.578). An analysis of key quantitative and qualitative methods highlights the benefits and limitations that should be carefully considered when designing research (Appendix 3).

There are three main frameworks from which different methodological approaches can be categorised: Quantitative, Qualitative and Mixed-Methods.

Mixed Methods

There are extensive oppositional differences between quantitative and qualitative research (Appendix 4) from which the positives and negatives have been debated by scholars throughout history (Gray, 2009, pp. 199-217; Feilzer, 2010). Quantitative research is concerned with uncovering facts, whilst qualitative research is rooted in uncovering

perspectives and opinions (Bell, 2010, pp.5–26). Often associated (but not exclusively) with the pragmatic paradigm, a mixed-method approach allows researchers to flexibly use both with the intent of strengthening methodological design (Creswell, 2009, p.23; Feilzer, 2010; Gray, 2009, pp. 199-217). A comparison of all three methodological frameworks highlights how quantitative and qualitative approaches can be merged in the context of mixed-methods (Appendix 5).

There are several approaches to research design within mixed-methods, however, two traditional examples include sequential and concurrent (Creswell, 2009, pp. 30-33; Castro *et al.*, 2010; Gray, 2009, pp. 199-217). A sequential design begins with a quantitative or qualitative study to gather data, from which a second stage will use the other data type to further explore or confirm findings (Castro *et al.*, 2010). A concurrent design collects both data sets simultaneously, in which findings are compared throughout the study (Appendix 6) (Gray, 2009, pp. 199-217). Mixed-methods is often discussed alongside triangulation, in which multiple methods are used to increase the comprehension and validity of research (Robinson *et al.*, 2011). However, the mixed-methods approach attempts to seek a deeper understanding and confirmation of results through integrating the most appropriate quantitative and qualitative elements to effectively answer the research question (Halcomb, 2018; Robinson *et al.*, 2011).

Whilst many modern researchers favour this flexible approach, others argue that a mixed-methods design makes research increasingly complex (Hampson and McKinley, 2023; Robinson *et al.*, 2011). There are often complications incurred when synthesising results, producing findings that are discrepant instead of concrete (Gray, 2009, pp. 199-217). This may be attributed to timescales, where quantitative data can be collected faster than qualitative. Additionally, different requirements of methods in each data set may produce different perspectives from participants in each part of the study, such as open-ended and closed-ended questions (Gray, 2009, pp. 199-217). Greene, Benjamin and Goodyear (2001) advise that a heightened degree of reflexivity and an open-minded approach to uncertainty is required for the validity of mixed-methods research. Furthermore, a robust mixed-methods approach requires transparency, a clear rationale linked to the research question, specification on the format of the design and an integration of both qualitative and quantitative findings (Bryman, 2014; Halcomb, 2018). Timescales and potential expenses are also considerations that must be taken into account prior to research (Gray, 2009, pp. 199-217; Halcomb, 2018).

Justification of Methodologies Selected for Critical Analysis

For the purpose of this study, two additional methodologies have been selected for critical discussion due to their association with insider research: Action Research; as is often regarded a valuable methodology for educators, looking to improve organisational processes and make positive change (Donato, 2003; Gray, 2009, pp. 312-334), and Ethnography; which has been identified as a useful methodology for researchers who already play an active role within their organisation due to its emphasis on observation (Costley, Elliott and Gibbs, 2010). As a voice practitioner working within a music conservatoire, both of these methods are highly relevant to my current practice and field of study. There are many more methodological approaches that may hold great value for consideration in future research endeavours, which have been identified in Appendix 1. Before discussing action research and ethnography, the concept of Insider Research must first be addressed.

Insider Research

Voice practitioners often epitomise the concept of “Insider Research” (Winter, 2020). They are deeply involved within their own practice and have a unique insight into the complexities of their specialism, making them ideal candidates for instigating real change and developing knowledge in their field (Costley, Elliott and Gibbs, 2010; Fleming, 2018). There is emerging evidence to suggest that insider researchers benefit their organisations through the use of work-based research to inform and improve practices, due to their valuable expertise and passion for their field (Costley, Elliott and Gibbs, 2010; Saidin and Yaacob, 2016). Insider research is compatible with multiple paradigms, although in some research circles, the insider position is heavily associated with subjectivity, due to the difficulties of maintaining neutrality alongside personal involvement (Costley, Elliott and Gibbs, 2010; Guba and Lincoln, 1994). Some scholars that value objective research deem subjectivity in academia as “undesirable” (Costley, Elliott and Gibbs, 2010).

Criticisms of Insider Research

Insider research can present many challenges for researchers. Their immersive position within the research can pose a risk of bias, as their personal values may influence research design and data collection (Fleming, 2018). Therefore, insider research must disclose full transparency of the research process to ensure rigour and validity (Costley, Elliott and Gibbs, 2010; Fleming, 2018). Furthermore, the uniquely close relationship that insider researchers may have with participants can influence data and results, and therefore, a careful consideration of methods is required (Fleming, 2018). For example, in some

instances, participants may be trusting of the researcher, and therefore feel comfortable when sharing personal perspectives in an interview setting. However, there is a risk that these relationships may have the opposite effect, in which participants fear judgement or pressure to partake, which may impact their responses (Fleming, 2018). A strategy for mitigating this is the careful consideration of innate bias and how this may potentially impact the outcomes of certain methods. Any methods selected as part of the research design must be justified and transparent (Costley, Elliott and Gibbs, 2010; Fleming, 2018). Additional ethical considerations of insider research will be discussed under the heading “**Ethics of Insider Research**”.

Action Research

Action Research is a methodology that seeks to facilitate change, create improvements, and address real world problems through research, with a focus on social and cultural issues (Gray, 2009, pp. 312-334). Regularly adopted in education research settings, an action researcher often plays an active and participative role within the study, working collaboratively with other participants with the intention of improving processes within an organisation (Bell, 2010, pp.5–26; Donato, 2003; Gray, 2009, pp. 312-334). In some cases, action researchers can also choose to remain objective and observe participants, creating strict boundaries to maintain distance, which allows this methodology to fit across multiple paradigms (Mcniff and Whitehead, 2009, p.11).

A key element of action research is a reflective cycle that runs throughout the process, in which results are continually evaluated to improve validity and inform potential further investigation (Bell, 2010, pp.5–26). The research process may be repeated several times to refine and continuously improve practice (Gray, 2009, pp. 312-334). Methods for gathering data may include (but are not limited to) observations, interviews, focus groups, and questionnaires (Gray, 2009, pp. 312-334). Whilst common sense suggests that all education practitioners would strive for continual development of processes, the action research approach insists that justification for change is based on “authenticated and validated evidence”, from which findings are made accessible for critical evaluation (Mcniff and Whitehead, 2009, p.33). Despite its potentially appealing nature to create positive change, action research presents many challenges, as the repetitive cycle of data collection and evaluation often causes studies to become time-consuming, creating difficulties in short-term research endeavours (Gray, 2009, pp. 312-334; McNiff and Whitehead, 2009, pp.83-84). Furthermore, when conducting insider research, a high degree of ethical consideration is required due to the close relationship between researcher and participant (Bell, 2010,

pp.5–26). Regardless of these challenges, action research may be an appealing methodology for voice researchers working within the context of educational organisations, such as music colleges, or within the community, due to its emphasis on improving work-based practise and social problems (Mcniff and Whitehead, 2009, pp. 34-35).

Ethnography

Ethnography seeks to gain a deeper understanding of culture through “the study of people in naturally occurring settings” (Brewer, 2000, cited in Bell, 2010, pp.5–26). A key method for achieving this is participant observation, allowing researchers to gain insight into actions and behaviours in social settings through shared experiences (Bell, 2010, pp.5–26). Other ethnographic methods may include interviews, textual analysis and visual methods (Brewer, 2004; Winter, 2020). In the context of ethnography, these methods are used to explore social meanings in settings where the researcher is closely involved within the field (Brewer, 2004). This makes ethnography particularly appropriate for voice practitioners acting as insider researchers (Winter, 2020). This can be advantageous for researchers, as trustworthy relationships are often present with participants early on, and insider status has the benefits of pre-existing insight into the social group or culture involved, potentially resulting in more efficient data analysis (Cox and Forbes, 2022). However, in the case of small scale studies, one criticism of ethnography includes a lack of representativeness and a risk of inadequate generalisation, due to uncertainty around how the study of one specific group can be translated across a wider population (Bell, 2010, pp.5–26; Brewer, 2004).

Despite these challenges, the core aim of understanding social meaning may make ethnography appealing for the study of mental health in vocalists, or professional artistry (Brewer, 2004; Winter, 2020).

Ethics

All research involving human participants requires serious consideration of ethics across all stages of the research, from conceptualisation to completion (Appendix 7) (Creswell, 2014, pp.132–141; Walliman, 2005, pp. 334-369). Ethical principles are concerned with protecting the human rights and welfare of research subjects, the protection of privacy and confidentiality, and the integrity of the research through honesty and transparency (Walliman, 2005, pp. 334-369). In 1979, The Belmont Report defined the key ethical principles as a) respect, including the collection of informed consent, b) beneficence, to prevent harm within participants, c) non-maleficence, to not cause deliberate harm, and d) justice, in which burdens and benefits of the study are distributed fairly (Resnik, 2018, p.27). “Harm” is not exclusively physical injury, but includes emotional and psychological harm also (Gray, 2009,

pp. 68-97). Whilst these principles may appear straightforward, there are often significant complications in applying ethics into practice, which may include translating these principles into different cultures or perspectives, where they may be perceived differently (Resnik and Shamoo, 2011; Walliman, 2005, pp. 334-369). The Singapore Statement of 2010 was created to transcend social, economic and cultural differences to create a globally recognised set of norms (Resnik and Shamoo, 2011; World Conference on Research Integrity, 2010). The statement outlined honesty, accountability, professionalism, and stewardship as its key principles, from which many ethical codes of conduct in research organisations around the world are based upon (Resnik and Shamoo, 2011) (Appendix 8). Delving deeper into these key principles, a requirement for anonymity and confidentiality protects the privacy of participants, whilst the need for consent protects the participant's right to choose (Creswell, 2014, pp.132–141; Bell, 2010, pp 44–60). The way in which these elements are applied within the research design needs to be communicated to participants prior to the study.

Informed Consent

Gaining informed consent from participants is imperative in both social and medical studies (Wiles *et al.*, 2007; Varkey, 2021). Informed consent can be defined as a procedure for ensuring what participation involves, an explicit understanding of the research purpose, potential risks they may incur and how findings will be shared before consenting to participate (Wiles *et al.*, 2007). Often, consent is collected in written form, and clarifies how responses will remain anonymous, and confidentiality of personal data and responses will be upheld (Bell, 2010, pp 44–60). Most importantly, giving consent must be voluntary, and participants must be “competent to understand and decide”, otherwise their agreement to participate becomes invalid (Varkey, 2021). When involving participants under the age of 16, written consent must be received from one (but preferably both) parent(s), and in the case of vulnerable people, such as the illiterate, the unwell, or foreign language speakers, additional measures to receive consent should be put in place on a case-by-case basis (UK Research and Innovation, 2023; Walliman, 2005, pp. 334-369). This is an important consideration for voice practitioners researching within educational environments attended by children, or those working in the community with vulnerable people.

Ethics of insider Research

As discussed, the ethical considerations regarding bias, validity and positionality are complex within insider research. However, the personal connection that insider researchers have to their field of study creates additional risks that must be carefully considered

(Fleming, 2018). One prominent ethical issue within insider research is the dynamic of power between researchers, participants and colleagues. When personal relationships become formalised for the purpose of research, it may be perceived that the researcher takes on a position of power, from which participants may feel pressured or coerced into participation (Costley, Elliott and Gibbs, 2010; Fleming, 2018). Furthermore, tensions may arise amongst colleagues who were not invited or willing to participate in the research, which may have implications on future working relationships (Fleming, 2018). There are also additional difficulties for insider researchers in preserving anonymity for those involved, as any criticisms or problems that are identified within research results may be traceable to those within the organisation (Costley, Elliott and Gibbs, 2010). These complex issues mean that ethical considerations should be rigorous within insider research projects. For this reason, it is crucial that insider researchers regularly reflect on and revise ethical practices throughout the study, to ensure that any issues that arise as the study progresses are addressed and mitigated (Costley, Elliott and Gibbs, 2010).

Reflection

As a lecturer working in a higher education music institution, my research endeavours seek to understand how performance anxiety impacts aspiring professional singers as they enter a turbulent music industry (Clements, 2022). Upon the completion of this paper, I have identified benefits in each paradigmatic viewpoint and methodology that will require further consideration and study. However, I feel that my values most align with the pragmatic paradigm and action research as a methodological approach for gaining a deeper insight into the experiences and effects of anxiety within my students. As anxiety rates are 7% higher in music students than the general student population (Clements, 2022), my research aims are to instigate change in how voice students receive mental health support within higher education, therefore, I am keen to explore how these approaches may enable me to make positive change as an insider-researcher within my work-based project.

Conclusion

The establishment of a paradigmatic viewpoint is essential for identifying underlying assumptions that may influence research design (Grix, 2019, pp. 51-77). The transparency and justification of positionality is crucial to the integrity of the research. The positivist paradigm may provide a sound framework for voice research based on anatomical or functional phenomena due to its values in science and objective inquiry, however, may also encounter limitations for investigating social elements of singing (Rehman and Alharthi, 2016). Interpretivism supports values rooted in the exploration of perspectives and human

behaviour to find meaning, and is therefore suited to exploring artistic endeavours, but should be carefully justified to ensure validity (Rehman and Alharthi, 2016; Winter, 2020). Pragmatism approaches research with problem-solving at the forefront, allowing for the flexibility to design strategies that best address the research question, which may incorporate a mixed-methods methodology to support this (Feilzer, 2010). This approach to research requires a high degree of reflexivity to maintain integrity, and careful synthesis of results to avoid inconsistencies (Feilzer, 2010; Bryman, 2014; Halcomb, 2018). As an insider researcher, one must address methodological and ethical considerations carefully. Action research seeks to drive change and improve working practices, whilst ethnography provides a deeper insight into cultures and human behaviour with an emphasis on observation (Bell, 2010, pp.5–26). Both methodologies present ethical challenges relating to insider relationships with participants and how this increases the risk of bias and workplace tensions that the voice practitioner must take into consideration (Costley, Elliott and Gibbs, 2010; Fleming, 2018). Other crucial steps required for ensuring proper ethical conduct include the collection of informed consent, in which measures taken to protect anonymity and confidentiality should be made explicit to participants (Wiles *et al.*, 2007; Varkey, 2021). The Belmont Principles and The Singapore Statement can be referred to alongside the code of conduct of one's own ethical committee for guidance (Resnik, 2018, p.27; Resnik and Shamoo, 2011).

Reference list

- Alsaigh, R. and Coyne, I. (2021) 'Doing a Hermeneutic Phenomenology Research Underpinned by Gadamer's Philosophy: A Framework to Facilitate Data Analysis', *International Journal of Qualitative Methods*, 20, pp. 1-10. Available at: <https://doi.org/10.1177/16094069211047820>
- Arnold, S.J. (1994) 'Hermeneutics and Consumer Research', *Journal of Consumer Research*, 21(1), pp.55–70. Available at: <https://doi.org/10.1086/209382>
- Bell, J. (2010) *Doing Your Research Project*. Berkshire: Open University Press
- Brewer, J.D. (2004) *Essential Guide to Qualitative Methods in Organizational Research*. Los Angeles: Sage.
- Bryman, A. (2014) 'June 1989 and beyond: Julia Brannen's contribution to mixed methods research', *International Journal of Social Research Methodology*, 17(2), pp.121–131. Available at: <https://doi.org/10.1080/13645579.2014.892653>
- Carter, N., Bryant-Lukosius, D., DiCenso, A., Blythe, J. and Neville, A.J. (2014) 'The Use of Triangulation in Qualitative Research', *Oncology Nursing Forum*, 41(5), pp.545–547. Available at: <https://doi.org/10.1188/14.ONF.545-547>
- Castro, F.G., Kellison, J.G., Boyd, S.J. and Kopak, A. (2010) 'A Methodology for Conducting Integrative Mixed Methods Research and Data Analyses', *Journal of Mixed Methods Research*, 4(4), pp.342–360. Available at: <https://doi.org/10.1177/1558689810382916>
- Chun Tie, Y., Birks, M. and Francis, K. (2019) 'Grounded Theory Research: a Design Framework for Novice Researchers', *SAGE Open Medicine*, 7(1), pp.1–8. Available at: <https://doi.org/10.1177/2050312118822927>
- Cisney, V.W. (n.d.) *Differential Ontology*. Available at: <https://iep.utm.edu/differential-ontology/#SH1a> (Accessed: 3 Dec. 2023).
- Clements, L. (2022) *Equity global scoping review of factors related to poor mental health and wellbeing within the performing arts sectors*. Available at: <https://www.equity.org.uk/media/hwignp3cu/mental-health-report.pdf> (Accessed: 14 Sep. 2023).
- Clough, P. and Nutbrown, C. (2012) *A Student's Guide to Methodology: Justifying Enquiry*. London: Sage Publications Limited.

Costley, C., Elliott, G. and Gibbs, P. (2010) *Doing work based research: Approaches to Enquiry For Insider-Researchers*. London: Sage Publications Ltd.

Cox, D. and Forbes, M. (2022). 'Introducing multi-sited focused ethnography for researching one-to-one (singing voice) pedagogy in higher education' *Music Education Research*, 24(5), pp.625–637. Available at: <https://doi.org/10.1080/14613808.2022.2138842>

Creswell, J.W. (2009) *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. 3rd ed. Los Angeles: Sage.

Creswell, J.W. (2014) *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. 4th ed. London: Sage Publications Ltd.

Crotty, M. (1998) *Introduction: The Research Process. The Foundations of Social research: Meaning and Perspective in the Research Process*. London: Sage Publications.

Deakin University Library (2023a) *Qualitative Study Design*. Available at: <https://deakin.libguides.com/qualitative-study-designs/phenomenology#:~:text=Descriptive%20phenomenology%20is%20a%20powerful> (Accessed: 29 Jan. 2024).

Deakin University Library (2023b) *Qualitative Study Design: Case Studies*. Available at: <https://deakin.libguides.com/qualitative-study-designs/case-studies> (Accessed: 29 Jan. 2024).

Dodgson, J.E. (2019) Reflexivity in Qualitative Research. *Journal of Human Lactation*, 35(2), pp. 220-222. Available at: <https://doi.org/10.1177/0890334419830990>

Donato, R. (2003) *Action Research*. Available at: https://edfutures.net/images/7/7a/Action_Research-RICHARD-DONATO.pdf (Accessed: 3 Jan. 2024).

Dowling, M. (2004) 'Hermeneutics: An Exploration', *Nurse Researcher*, 11(4), pp.30–39. Available at: <https://doi.org/10.7748/nr2004.07.11.4.30.c6213>

Easterby-Smith, M., Thorpe, R. and Jackson, P. (2015) *Management and Business Research*. Los Angeles: Sage.

Feilzer, Y. (2010) 'Doing Mixed Methods Research Pragmatically: Implications for the Rediscovery of Pragmatism as a Research Paradigm', *Journal of Mixed Methods Research*, 4(1), pp.6–16. Available at: <https://doi.org/10.1177/1558689809349691>

Fleming, J. (2018) 'Recognizing and Resolving the Challenges of Being an Insider Researcher in Work-Integrated Learning', *International Journal of Work-Integrated Learning, Special Issue*, 19(3), pp.311–320. Available at: <https://files.eric.ed.gov/fulltext/EJ1196753.pdf> (Accessed: 6 Jan. 2024).

George, T. (2022) *Unstructured Interview | Definition, Guide & Examples*. Available at: <https://www.scribbr.co.uk/research-methods/unstructured-interviews/> (Accessed: 7 Jan. 2024).

Gray, D.E. (2009) *Doing Research in the Real World*. 2nd edn. London: Sage Publications.

Greene, J.C., Benjamin, L. and Goodyear, L. (2001) 'The Merits of Mixing Methods in Evaluation', *Evaluation*, 7(1), p.41. Available at: <https://doi.org/10.1177/13563890122209504>

Grix, J. (2019) *The Foundations of Research*. London: Palgrave Macmillan.

Guba, E.G. and Lincoln, Y.S. (1994) 'Competing Paradigms in Qualitative Research', in N. K. Denzin and Y. S. Lincoln (eds) *Handbook of Qualitative Research*. Thousand Oaks, CA: Sage pp.105–117.

Halcomb, E.J. (2018) 'Mixed Methods Research: The Issues Beyond Combining Methods', *Journal of Advanced Nursing*, 75(3), pp.499–501. Available at: <https://doi.org/10.1111/jan.13877>

Hampson, T. and McKinley, J. (2023) 'Problems Posing as solutions: Criticising Pragmatism as a Paradigm for Mixed Research', *Research in Education*, 116(1), pp. 124–138. Available at: <https://doi.org/10.1177/00345237231160085>

Kaushik, V. and Walsh, C.A. (2019) 'Pragmatism as a Research Paradigm and Its Implications for Social Work Research', *Social Sciences*, 8(9). Available at: <https://doi.org/10.3390/socsci8090255>

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. Available at: <https://doi.org/10.5430/ijhe.v6n5p26>

Levers, M.-J.D. (2013) 'Philosophical paradigms, Grounded theory, and Perspectives on Emergence', *SAGE Open*, 3(4), pp.1–6. Available at: <https://doi.org/10.1177/2158244013517243>

Mackenzie, N. & Knipe, S. (2006) 'Research dilemmas: Paradigms, methods and methodology', *Issues In Educational Research*, 16(2), 193-205. Available at: <http://www.iier.org.au/iier16/mackenzie.html> (Accessed: 21 Dec 2023).

Maruna, S. and Butler, M. (2005) 'Phenomenology', *ScienceDirect*, 3, pp.49–52. Available at: <https://www.sciencedirect.com/science/article/abs/pii/B0123693985005636> (Accessed: 23 Jan. 2024).

Mcniff, J. and Whitehead, J. (2009) *All you need to know about Action Research*. London: Sage.

Mitchell, A. (2018) 'A Review of Mixed Methods, Pragmatism and Abduction Techniques' *Electronic Journal of Business Research Methods*, 16(3), pp.103–116. Available at: <https://academic-publishing.org/index.php/ejbrm/article/view/1378/1341> (Accessed: 7 Jan. 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://doi.org/10.1177/2345678906292462>

Noor, K.B.M. (2008) 'Case Study: A Strategic Research Methodology', *American Journal of Applied Sciences*, 5(11), pp.1602–1604. Available at: <https://doi.org/10.3844/ajassp.2008.1602.1604>

Rehman, A.A. and Alharthi, K. (2016) 'An introduction to research paradigms An Introduction to Research Paradigms', *International Journal of Educational Investigations*, 3(8), pp.51–59. Available at: https://www.researchgate.net/publication/325022648_An_introduction_to_research_paradigms (Accessed: 20 Dec 2023)..

Resnik, D.B. (2018) *Ethics of Research with Human Subjects: Protecting People, Advancing Science, Promoting Trust*. Switzerland: Springer International Publishing.

Resnik, D.B. and Shamoo, A.E. (2011) 'The Singapore Statement on Research Integrity', *Accountability in Research*, 18(2), pp.71–75. Available at: <https://doi.org/10.1080/08989621.2011.557296>

Robinson, A.L., Emden, C.G., Croft, T.D., Vosper, G.C., Elder, J.A., Stirling, C. and Vickers, J.C. (2011) 'Mixed Methods Data Collection in Dementia Research', *Journal of Mixed*

Methods Research, 5(4), pp.330–344. Available at:
<https://doi.org/10.1177/1558689811416940>

Saidin, K. and Yaacob, A. (2016) 'Insider Researchers: Challenges & Oppurtunities', *Proceedings of the ICECRS*, 1(1). Available at: <https://doi.org/10.21070/picecrs.v1i1.563>

Stough, L.M. and Lee, S. (2021) 'Grounded Theory Approaches Used in Educational Research Journals', *International Journal of Qualitative Methods*, 20, Available at:
<https://doi.org/10.1177/16094069211052203>

Thomas, L. (2022) *Quasi-Experimental Design | Definition, Types & Examples*. Available at:
<https://www.scribbr.co.uk/research-methods/quasi-experimental/> (Accessed: 1 Jan. 2024).

Trivedi, C. (2020). *Ontology and epistemology: An Explainer*. Available at:
<https://conceptshacked.com/epistemology-and-ontology/> (Accessed: 3 Dec. 2023).

UK Research and Innovation. (2023) *Research with Potentially Vulnerable People*. Available at:
<https://www.ukri.org/councils/esrc/guidance-for-applicants/research-ethics-guidance/research-with-potentially-vulnerable-people/> (Accessed: 6 Jan. 2024).

Ültanır, E. (2012) 'An Epistemological Glance at the Constructivist Approach: Constructivist Learning in Dewey, Piaget, and Montessori', *International Journal*, [online] 5(2). Available at:
<https://files.eric.ed.gov/fulltext/ED533786.pdf> (Accessed: 15 Dec. 2023).

University of Sheffield. (2023) *Safeguarding Policy*. Available at:
<https://www.sheffield.ac.uk/rpi/ethics-integrity/safeguarding/about#:~:text=Safeguarding%2C%20in%20the%20context%20of> (Accessed: 6 Jan 2024).

University of Wales Trinity Saint David (2022). *Research Ethics & Integrity Code of Practice*. Available at:
<https://www.uwtsd.ac.uk/media/uwtsd-website/content-assets/documents/research/REICoP-July-2022.pdf> (Accessed: 30 Jan. 2024).

Varkey, B. (2021) 'Principles of Clinical Ethics and Their Application to Practice', *Medical Principles and Practice*, 30(1), pp.17–28. Available at: <https://doi.org/10.1159/000509119>

Von Zweck, C., Paterson, M. and Pentland, W. (2015) 'The Use of Hermeneutics in a Mixed Methods Design', *The Qualitative Report*, 13(1), pp. 116-134. Available at:
[doi:https://doi.org/10.46743/2160-3715/2008.1609](https://doi.org/10.46743/2160-3715/2008.1609)

Walliman, N. (2005) *Your Research Project*. 2nd edn. London: SAGE Publications Ltd.

Wiles, R., Crow, G., Charles, V. and Heath, S. (2007) 'Informed Consent and the Research Process: Following Rules or Striking Balances?', *Sociological Research Online*, 12(2), pp.99–110. Available at: <https://doi.org/10.5153/sro.1208>

Winter, D. (2020) 'Understanding Research Methods: from Singing Teacher to Practitioner Researcher'. Available at: [doi:https://doi.org/10.13140/RG.2.2.16046.13122](https://doi.org/10.13140/RG.2.2.16046.13122)

World Conference on Research Integrity. (2010). *Singapore Statement on Research Integrity*. Available at: <https://www.wcrif.org/guidance/singapore-statement> (Accessed: 6 Jan 2024).

Appendix 1: Additional Methodologies - To be completed

Phenomenology		
Description	Benefits	Potential Challenges
Phenomenological research is underpinned by the belief that the study of social phenomena is rooted in the human experience (Gray, 2005, pp. 22-31; Maruna and Butler, 2005). Researchers must “bracket” out their preconceptions of phenomena, and remain open to the worldview of others (Gray, 2005, pp. 22-31). Key methods include: • Unstructured interviews with open-ended questions • Observations • Focus groups	- An effective methodology for understanding human behaviour and motivations (Deakin University Library, 2023; Gray, 2005, pp. 22-31) - The process of “bracketing out” researcher preconceptions may mitigate potential researcher bias (Dowling, 2004). - A useful methodology within organisations to improve policy (Deakin University Library, 2023).	- The use of small-scale case studies and sample sizes creates challenges when generalising findings across a larger population (Gray, 2005, pp. 22-31). - Large amounts of data gathered from unstructured or open-ended interviews can be time-consuming to analyse (Deakin University Library, 2023a). - Analysis of results must be carried out without researcher bias which may be difficult to navigate (Deakin University Library, 2023a).
Hermeneutics		
Description	Benefits	Potential Challenges
Hermeneutics emphasises that the human perspective is linguistic, and language can be used to interpret and better understand lived experiences (Arnold, 1994; Dowling, 2004). Heidegger’s “Hermeneutic Circle” is a process in which understanding is gained by considering a phenomena as a whole, and then moving to focus on its individual parts (Von Zweck, Paterson and Pentland, 2015). This ensures researchers interpret an experience in its entirety with no missing details. Key Methods:	- Hermeneutics offers a flexible approach to mixed-methods research and is useful for interpreting information from a wide variety of sources (Von Zweck, Paterson and Pentland, 2015). - An appropriate choice for researchers looking to “engage in story-telling” to uncover meaning in participant experiences (Winter, 2020).	- Potential language barriers with participants may create challenges for generating data and analysing responses (Deakin University Library, 2023a). - The unstructured approach to gathering data using open-ended questions makes data analysis complex and laborious (Alsaigh and Coyne, 2021).

• A thorough literature review • Focus groups • Unstructured, open-ended interviews (Winter, 2020).		
Grounded Theory		
Description	Benefits	Potential Challenges
The Grounded Theory approach seeks to develop new theories from the collection and analysis of data without predetermined or prior assumptions (Gray, 2009, pp. 502-513). Data is gathered and analysed through a rigorous coding process to form the basis of themes and categories into which data is organised (Walliman, 2005, pp. 308-310). Further rounds of data collection and analysis are then used to solidify the links and meanings between findings (Bell, 2005, pp. 18-21). Key Methods: • Observations • Open-ended interviews • Theoretical sampling (Walliman, 2005, pp. 308-310; Winter, 2020).	- A structured yet flexible approach, particularly appropriate when studying under-researched phenomena due to the process of inductive reasoning that allows theories to emerge throughout the research process (Chun Tie, Birks and Francis, 2019). - A suitable methodology for testing student interactions in a classroom environment due to its flexibility and compatibility with common data sources in education research, such as observations and verbal interactions (Stough and Lee, 2021).	- Produces large quantities of unstructured data that must be rigorously analysed. This process can be complex and present challenges when attempting to categorise findings. (Walliman, 2005, pp. 308-310). - The researcher must be able to navigate ambiguity and remain open to the emergence of new patterns and concepts (Winter, 2020).
Case Studies		
Description	Benefits	Potential Challenges
Case studies use multiple sources of evidence in a real-life context to investigate specific phenomena and events with a broad or narrow scope of focus (Noor, 2008; Winter, 2020). They can be used to	- Advantageous for the study of a specific phenomenon as key areas of a problem are studied in great depth (Bell, 2005, pp. 10-13). - Researchers to gain a	- The study of single events can be highly subjective and create challenges with generalisation (Bell, 2005, pp. 10-13; Noor, 2008; Winter, 2020). - Data rich findings may be

further investigate themes highlighted in the research, to determine key areas for further study ahead of the research process, or as a stand alone method of inquiry (Bell, 2005, pp. 10-13). Key Methods: • Interviews • Focus groups • Observations • Textual analysis,	holistic overview of specific cases and generate a substantial amount of evidence that may form the basis for next steps within the research process (Bell, 2005, pp. 10-13; Noor, 2008). - Useful within organisations to improve practices or highlight problems in key areas, as they highlight emerging patterns or changing within real-life settings (Bell, 2005, pp. 10-13; Noor, 2008).	difficult and time-consuming to analyse (Deakin University Library, 2023b).
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Appendix 2: The Ontology, Epistemology, Methodologies and Methods Tree

Figure 1.1

Easterby-Smith, Thorpe and Jackson (2015) use the analogy of a tree trunk to emphasise the important link between ontology and epistemology and the methodology and methods within the research process:

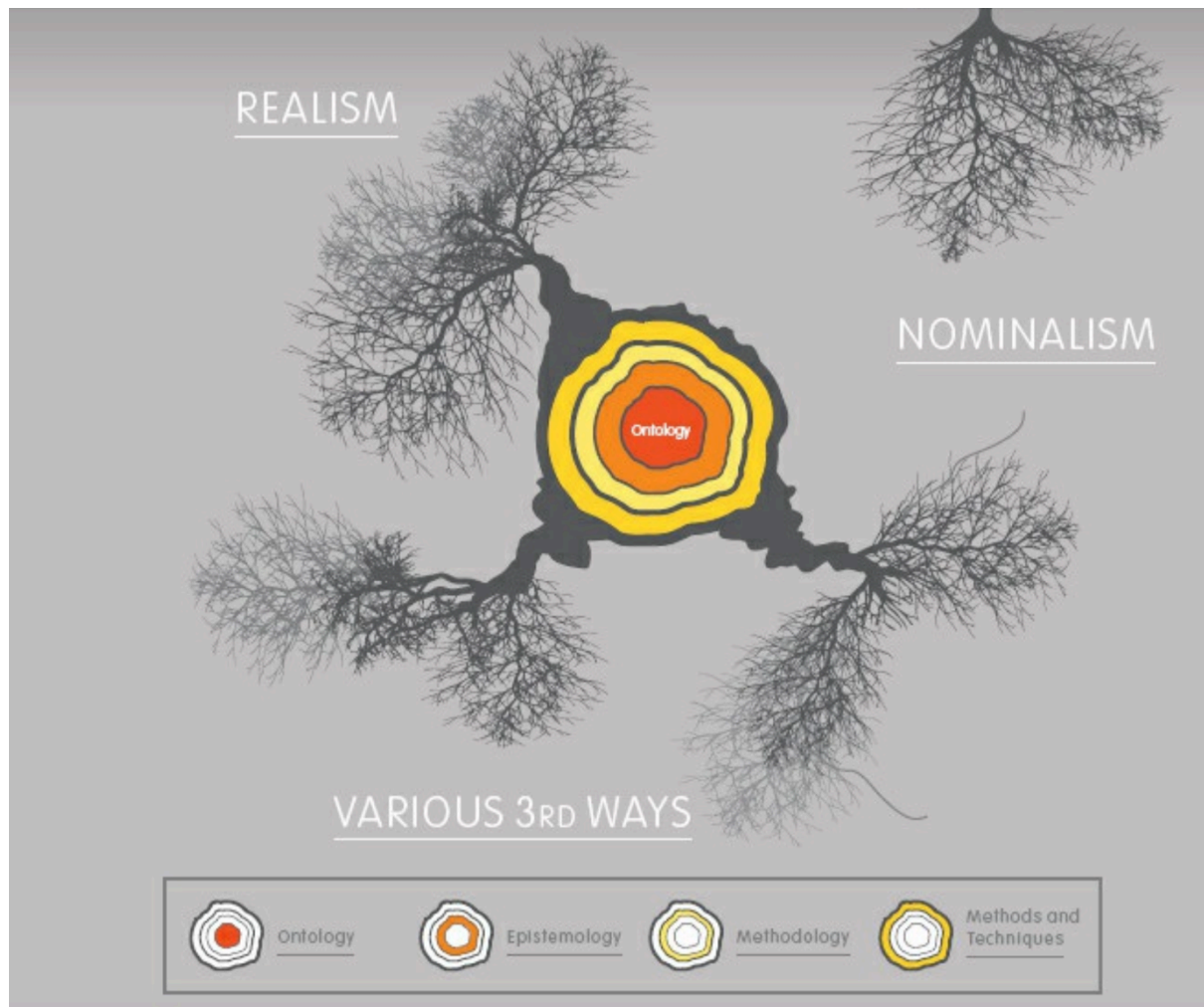
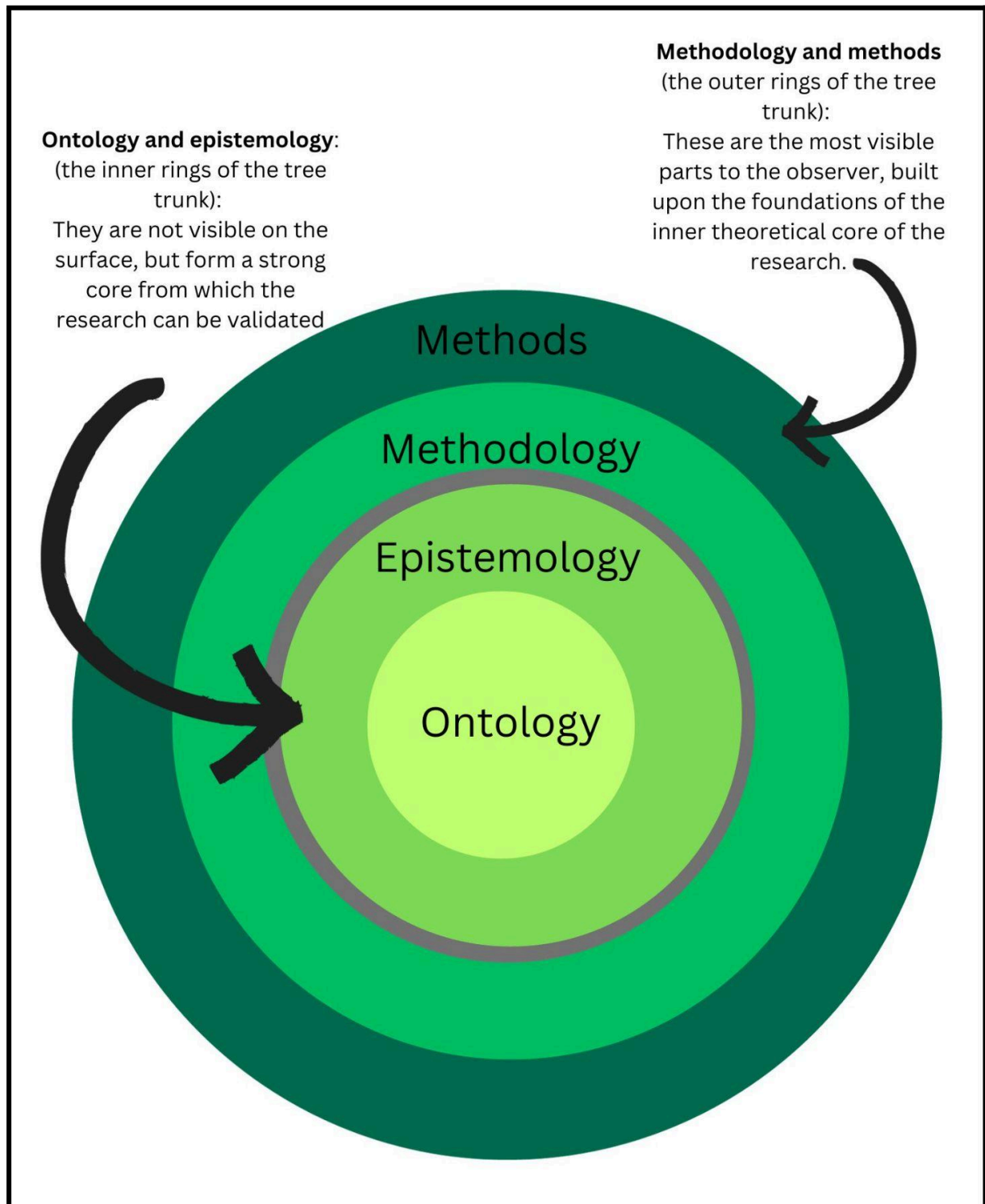


Figure 1.2

My own interpretation of Easterby-Smith, Thorpe and Jackson's (2015) Ontology, Epistemology, Methodologies and Methods Tree



Appendix 3: Analysis of Common Quantitative and Qualitative Methods

Interviews		
General Description: Interviews are a widely used and flexible method that can often be used to gain an insight into human experiences and perceptions. They can be conducted in person, online or over the phone, which makes them a convenient way of gathering data. There are three types of interviews as outlined below (Costley, Elliott and Gibbs, 2010, pp. 92-97).		
Type	Description	Benefits and Limitations
Structured	Structured interviews take place like verbal questionnaires. They are made up of a sequence of pre-determined questions that generate short, concise and sometimes numerical answers. Structured interviews involve each participant receiving the same set of questions in a set sequence (Costley, Elliott and Gibbs, 2010, pp. 92-97).	Responses generated from structured interviews are easy to analyse due to their more concise nature, however, if questions are not carefully worded, there is a risk of misinterpretation from the participant, which may cause issues in the data analysis phase (Winter, 2020).
Semi-structured interviews	Semi-structured interviews provide more freedom than structured interviews. The interviewer has a set of predetermined questions, but these are flexible depending on the course of the interview. Additional questions may be asked. This allows the interviewee to expand on their answers more freely (Gray, 2009, p. 373).	Semi-structured interviews allow for a richer exploration of subjective meanings. The course of the interview may divert to develop new findings that may be informative to the study (Gray, 2009, p. 373). However, the lack of consistency across participants may generate inconsistent results (Winter, 2020).
Unstructured	Unstructured interviews do not involve predetermined or sequential questions. Questions are determined based on participant's previous answers, making these the most flexible type of interview (George, 2022).	Exploratory in nature, unstructured interviews are informal and often produce intriguing responses from participants. However, there is an increased risk of the interviewer imposing leading questions on the interviewee, due to a lack of structure. The extensive flexibility often produces

		less reliable or generalisable data, and they are often time-consuming to conduct (George, 2022).
Focus Groups	Focus groups are often regarded as a form of interviewing that involves speaking to a small group. Focus group interviews often take place more than once throughout the course of a study, so that the variable being observed can be monitored over a period of time (Gray, 2009, p. 233). These are guided by a moderator, whose role is to “draw out information from participants” (Winter, 2022).	Focus groups can provide a useful environment in which discussion can spark new themes or ideas, which may then be a useful starting point for the basis of another method, such as a survey (Gray, 2009, p. 233). One concern for consideration is the selection of participants: for example, if there is a minority group within the sample of participants, such as a disproportionate number representing a particular culture or age group, this may cause them to feel constrained and hinder their engagement with the interview (Bell, 2005, pp. 165-167).

Questionnaires

General Description:

Questionnaires are a commonly used method in large and small scale studies in which participants respond to a sequence of questions in a set order. They are easy to create, and new developments in technology allow responses to be generated, organised and categorised easily and cheaply. However, the number of respondents greatly impacts the reliability of this method (Gray, 2009, pp.337-367).

Type	Description	Benefits and Limitations
Open-question	Open-ended questions allow respondents the space to elaborate on their answers with more freedom. Questions generally begin with “How”, “Why” and “What” to encourage participants to provide more detailed responses (Gray, 2009, pp.337-367).	This form of questionnaire allows for richer and more detailed responses due to a lack of limitations. However, this can make them more difficult and time consuming to analyse. The use of a “coding frame” is required to categorise answers into distinct themes (Gray, 2009, pp.337-367) .
Closed-question	Closed-ended questionnaires generate responses that are short	Data produced in closed-ended questionnaires is easy to

	and concise. These may take the form of yes/no questions and multiple choice answers, that may generate verbal or numerical responses. This means that the data produced is precise and easily comparable (Costley, Elliott and Gibbs, 2010, pp. 92-97).	analyse. This makes them less time-consuming than open-ended questionnaires. One of the main drawbacks of this format however is that participant's answers are limited, meaning that responses are less rich in data (Costley, Elliott and Gibbs, 2010, pp. 92-97).
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Observations:

General Description:

Observations may be a useful tool for voice practitioners working within education to observe group or one-to-one sessions. They can be useful for understanding the application of new techniques or for observing behaviour (Winter, 2020). Observation records, depending on their format, can produce qualitative or quantitative data, but measures must be taken to ensure that unexpected data can be captured effectively (Costley, Elliott and Gibbs, 2010, p. 95).

Type	Description	Benefits and Limitations
Unstructured Observation	Unstructured observations do not have predetermined categories, therefore, they may be useful in instances where more detail is required to clarify a hypothesis. They can help to generate themes that the research design is then based upon (Bell, 2010, pp. 191-205).	Whilst they can be extremely useful as a precursor to the research, they may be less useful in small-scale studies as the data can be difficult to analyse due to its broad scope (Winter, 2020).
Structured Observation	A structured observation has predetermined categories, and is therefore more focused than its unstructured counterpart (Winter, 2020). These categories emerge as a result of the hypothesis, of which a structured observation will seek to prove or disprove (Bell, 2010, pp. 191-205).	Structured observations provide data that is more concise, and therefore, likely to be more relevant to the research outcomes. However, as there are predetermined factors that are the focus of the observation, criticisms include the increased risk of bias, in which the researcher may attempt to sway the outcome of the results to what is most desirable, as opposed to what emerges naturally (Bell, 2010, pp. 191-205).

Participant Observation	A participant observation involves the researcher observing and becoming involved with the daily life of participants. They are often used to gain a deeper understanding of the setting in which the observation is taking place. Observers are able to listen and ask questions to participants flexibly with the aim of addressing the research question (Bell, 2010, pp.5–26).	Participant observations provide detailed insights into different cultures and natural environments, producing rich qualitative data (Winter, 2020). However, researchers often find it difficult to remain neutral and unbiased when conducting participant observations as they are often very much intertwined into the environment with participants. These kinds of observations may go on for extended periods of time, which may not be feasible in small scale studies (Bell, 2010, pp.5–26).
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Experiments

Experimental methodologies are designed to uncover the objective truth. They sit firmly in the family of quantitative methods and use deductive reasoning to test a hypothesis. They are commonly applied in the fields of physical and medical sciences. There are two main categories of experiments - true-experiments and quasi-experiments (Gray, 2009, pp. 131-163).

Type	Description	Benefits and Limitations
True-Experiment	True-experiments allow the researcher to have a high degree of control over what is being tested, as well as when, where and how the study will take place. Subjects involved in the experiment will be assigned to criteria on a random basis (Gray, 2009, pp. 131-163).	Due to increased control with experimental variables, true experiments are thought to have a high degree of validity. However, these kinds of experiments can be very expensive and time consuming, so may not be appropriate for small-scale studies (Gray, 2009, pp. 131-163).
Quasi-Experiment	A quasi-experiment, like a true experiment, aims to “establish the cause-and-effect relationship between an independent and dependent variable” (Thomas, 2022), however, unlike a true experiment, quasi-experiments do not use randomisation in the assignment of subjects to	Although considered to produce results with less validity than a true-experiment, quasi-experiments are an appropriate alternative when a true experiment is not possible due to expenses or ethical considerations (Gray, 2009, pp. 131-163).

	groups, resulting in less control over the experiment (Gray, 2009, pp. 131-163).	
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Appendix 4: A comparison of Quantitative and Qualitative methods

This table was adapted from “Table 8.1: Differences between Quantitative and Qualitative Methods” (Bryman, 1999, cited in Gray, 2009, p. 200).

	Methods	
	Quantitative	Qualitative
Epistemology	Objectivist (Gray, 2009, p. 200)	Constructionist (Ültanır, 2012)
Researcher and Subject Relationship	Distant Neutral Outsider (Gray, 2009, p. 200; Guba and Lincoln, 1994)	Close Insider (Gray, 2009, p. 200).
Research Aims	To uncover and confirm facts and objective truth (Bell, 2010, pp.5–26; Gray, 2009, p. 200)	To explore meaning and perspectives (Bell, 2010, pp.5–26; Gray, 2009, p. 200)
Relationship to determining conclusions	Deductive (Gray, 2009, p. 200)	Inductive (Gray, 2009, p. 200)
“The nature of data” Gray, 2009, p. 200).	Numerical or statistical (Bell, 2010, pp.5–26; Gray, 2009, p. 200)	Verbal or text based (Bell, 2010, pp.5–26; Gray, 2009, p. 200)

Appendix 5: A Comparative Table of Quantitative, Qualitative and Mixed-Methods approaches

Based on Creswell's (2009, p. 34) "**Table 1.4** Qualitative, Quantitative, and Mixed Methods Approaches"

The limitations column was adapted from Castro *et al.* (2010).

Methodology	Common Philosophical Framework	Strategies of Inquiry	Methods	Common Research Practises	Limitations (Castro <i>et al.</i> , 2010)
Quantitative	Positivism/ Post-Positivism	Experimental	Surveys, True Experiments, Quasi-Experiments, Closed Ended Questions, Predetermined Approaches	- Numerical measurement of data - Identifies variables and relates these to a hypothesis - Ethical considerations	- Findings are often detached from a "real-world" context.
Qualitative	Interpretivism/ Constructivism	Ethnography, Action Research, Grounded Theory, Case Studies, Hermeneutics, Phenomenology	Interviews, Open-ended questions, text or image data, observations, emerging approaches	- Identifies meaning - Consideration of personal values within the study - Looks for context within settings - Works collaboratively with participants and other researchers - Validates accuracy of results - Ethical considerations	- Challenges in measuring reliability across certain qualitative methods, such as observations and case studies - Historically poor prescriptive procedures, causing difficulties in drawing definitive results or confirmation. - Often small sample sizes that are hard to generalise across a larger population.
Mixed Methods	Pragmatic	Sequential, Concurrent, Transformative	Open and closed ended questions, Predetermined and Emerging approaches	- Collects quantitative and qualitative data - Justifies mixed-methods approach with a rationale - Integrates data throughout the enquiry - Statistical and text analysis - Employs considerations of both quantitative and qualitative study - Ethical considerations	

Appendix 6: Example Mixed-Method Designs - Sequential and Concurrent

This table was adapted from “Figure 8.1: Four Mixed Methods Models” (Gray, 2009, pp. 205-212)

Example Design 1: Sequential (Creswell, 2009)	
Qualitative Study to identify themes → These themes are used to inform the Quantitative Study	
Qualitative Method can be used when little is known about the research topic to identify key concepts for further study.	Quantitative Method is then designed around themes identified, in which findings from Qualitative study are further researched and confirmed.
Example Design 2: Sequential (Creswell, 2009)	
Quantitative Study to Identify Themes → Qualitative study used to deepen investigation of themes	
A Quantitative Method is used to identify important data, which is then categorised into themes	A Qualitative Method, such as interviews, observations or case studies, may be used to deepen understanding of key themes.
Example Design 3: Concurrent (Creswell, 2009)	
Quantitative and Qualitative Studies could take place simultaneously	
A concurrent design may be useful to draw comparisons between both sets of results simultaneously throughout the study.	

Appendix 7: Ethical Considerations at Each Stage of Research

Table adapted from “Table 4.1 Ethical Issues in Qualitative, Quantitative, and Mixed Methods Research” (Creswell, 2014, pp.132–141)

Stage of Research	Ethical Issues and Actions to be taken
Prior to the study/before research begins	- Consult with ethical code of conduct within the institution/organisation/area in which the research is taking place - Submit research and ethics proposal to university ethics committee for approval - Seek permission from site for carrying out research and participants (Creswell 2014, pp.132–141).
Beginning stages of the research	- Decide on a research problem that will benefit participants - Inform participants and disclose the purpose of the study to the participants - With help from the ethics committee, create consent forms and distribute them to participants. Ensure that participants have an explicit understanding that there is no pressure to consent in taking part in the research. - Seek to obtain special forms of consent needed for children (such as written consent from both parents), vulnerable adults or those who cannot provide written consent and ensure they have been accounted for, with help from the research supervisor (Creswell 2014, pp.132–141). - Ensure that participants are aware of measures put in place for anonymity and confidentiality. Do not make promises to participants that cannot be upheld (Bell, 2010, pp 44–60). - Discuss how participant data will be stored and accessed as part of the consent stage. - Ensure that any religious, cultural or gender differences have been accounted for and respected (Creswell 2014, pp.132–141).
Data collection stage	- Maintain clear communication with the research site and convey any possible disruption that may be caused by the research - Do not use leading questions or enforce personal opinions or beliefs onto participants that may influence research outcomes or cause participants to feel pressured or uncomfortable (Creswell 2014, pp.132–141). - if a participant discloses harmful personal information, ensure that any proper safeguarding procedures that are in

	place within the organisation are upheld, and research is paused with immediate effect. This is particularly crucial when working with children or vulnerable young people/adults (University of Sheffield, 2023).
Data analysis stage	- Report multiple perspectives collected throughout the research. - Do not disclose one-sided results and ensure that all contrary results are reported honestly (Creswell 2014, pp.132–141).
Reporting stage	- Do not plagiarise the work of others, and ensure credit and citations of other authors' work are disclosed appropriately and in line with referencing guidelines (Creswell 2014, pp.132–141). - Respect anonymity and confidentiality at all times, and do not identify participants or organisations in any way that may be traced back to them (Bell, 2010, pp 44–60). - Avoid bias language and disclose researcher positionality - Ensure data is stored correctly and in line with ethical guidelines upon completion of study. (Creswell 2014, pp.132–141)

Appendix 8: University of Wales Trinity Saint David: Research Ethics & Integrity Code of Practice

Figure 2.1:

An extract of the University of Wales Trinity Saint David: Research Ethics & Integrity Code of Practice (University of Wales, 2022).

4.1 Research Integrity

Research conducted in and by the University should be undertaken in accordance with commonly agreed standards of good practice. The Concordat to Support Research Integrity recognises that the core aspects of research integrity include:

- **Honesty** in all aspects of research, including in the presentation of research goals, intentions and findings; in reporting on research methods and procedures; in gathering data; in using and acknowledging the work of other researchers; and in conveying valid interpretations and making justifiable claims based on research findings.
- **Rigour**, in line with prevailing disciplinary norms and standards: in performing research and using appropriate methods; in adhering to an agreed protocol where appropriate; in drawing interpretations and conclusions from the research; and in communicating the results.
- **Transparency and open communication** in declaring conflicts of interest; in the reporting of research data collection methods; in the analysis and interpretation of data; in making research findings widely available, which includes sharing negative results as appropriate; and in presenting the work to other researchers and to the general public.
- **Care and respect** for all participants in and subjects of research, including humans, animals, the environment and cultural objects. Those engaged with research must also show care and respect for the stewardship of research and scholarship for future generations.
- **Accountability** for the University to create a research environment in which its staff and students are empowered and enabled to own the research process. Those engaged with research must also ensure that investigators are held to account when behaviour falls short of the standards set by this Code.

Figure 2.2:

Similarities can be seen between this code of practise and Figure 2: The Singapore Statement of 2010 (World Conference on Research Integrity, 2010)

Singapore Statement on Research Integrity

Preamble. The value and benefits of research are vitally dependent on the integrity of research. While there can be and are national and disciplinary differences in the way research is organized and conducted, there are also principles and professional responsibilities that are fundamental to the integrity of research wherever it is undertaken.

PRINCIPLES

Honesty in all aspects of research
Accountability in the conduct of research
Professional courtesy and fairness in working with others
Good stewardship of research on behalf of others

RESPONSIBILITIES

1. Integrity: Researchers should take responsibility for the trustworthiness of their research. 2. Adherence to Regulations: Researchers should be aware of and adhere to regulations and policies related to research. 3. Research Methods: Researchers should employ appropriate research methods, base conclusions on critical analysis of the evidence and report findings and interpretations fully and objectively. 4. Research Records: Researchers should keep clear, accurate records of all research in ways that will allow verification and replication of their work by others. 5. Research Findings: Researchers should share data and findings openly and promptly, as soon as they have had an opportunity to establish priority and ownership claims. 6. Authorship: Researchers should take responsibility for their contributions to all publications, funding applications, reports and other representations of their research. Lists of authors should include all those and only those who meet applicable authorship criteria. 7. Publication Acknowledgement: Researchers should acknowledge in publications the names and roles of those who made significant contributions to the research, including writers, funders, sponsors, and others, but do not meet authorship criteria. 8. Peer Review: Researchers should provide fair, prompt and rigorous evaluations and respect confidentiality when reviewing others' work. 9. Conflict of Interest: Researchers should disclose financial and other conflicts of interest that could compromise the trustworthiness of their work in research proposals, publications and public communications as well as in all review activities.	10. Public Communication: Researchers should limit professional comments to their recognized expertise when engaged in public discussions about the application and importance of research findings and clearly distinguish professional comments from opinions based on personal views. 11. Reporting Irresponsible Research Practices: Researchers should report to the appropriate authorities any suspected research misconduct, including fabrication, falsification or plagiarism, and other irresponsible research practices that undermine the trustworthiness of research, such as carelessness, improperly listing authors, failing to report conflicting data, or the use of misleading analytical methods. 12. Responding to Irresponsible Research Practices: Research institutions, as well as journals, professional organizations and agencies that have commitments to research, should have procedures for responding to allegations of misconduct and other irresponsible research practices and for protecting those who report such behavior in good faith. When misconduct or other irresponsible research practice is confirmed, appropriate actions should be taken promptly, including correcting the research record. 13. Research Environments: Research institutions should create and sustain environments that encourage integrity through education, clear policies, and reasonable standards for advancement, while fostering work environments that support research integrity. 14. Societal Considerations: Researchers and research institutions should recognize that they have an ethical obligation to weigh societal benefits against risks inherent in their work.
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The Singapore Statement on Research Integrity was developed as part of the 2nd World Conference on Research Integrity, 21-24 July 2010, in Singapore, as a global guide to the responsible conduct of research. It is not a regulatory document and does not represent the official policies of the countries and organizations that funded and/or participated in the Conference. For official policies, guidance, and regulations relating to research integrity, appropriate national bodies and organizations should be consulted. Available at: www.singaporestatement.org