

MODULE 2

BMPF 7005: Undertaking Research in Workplaces

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

INTRODUCTION

This paper will begin by giving brief descriptions of the terms ontology and epistemology and discuss the opposing views on the need for a researcher to define their own personal ontological and epistemological beliefs. Research paradigms will be discussed, along with their alignment to ontology and epistemology, linking to research papers within the field of voice pedagogy. Quantitative and Qualitative research will be outlined, along with recognition of the paradigmatic beliefs to which they align. Mixed method research will be evaluated by an analysis of its justification for use and its limitations. Research methodologies will be discussed, focusing on hermeneutic phenomenology and ethnography, addressing their alignment to paradigmatic and ontological beliefs. Research methods will be discussed, highlighting those found most commonly in the field of vocal pedagogy research along with analysis of their limitations. Finally, ethical considerations will be discussed with a focus on insider research, confirmation bias and informed consent.

ONTOLOGY AND EPISTEMOLOGY

Ontology

Ontology is the theory of what exists (Kalof et al. 2008). It refers to 'the set of basic assumptions made by the researcher about the nature of reality' (Easterby-Smith, et al., 2012). Waring (2012) suggests we imagine ontological positions along a continuum from realism to constructivism; where realism has a singular objective without the influence of individual perception and constructivism has multiple constructions of realities by individual experience. Waring (2012) asserts that a researcher must understand their own ontological beliefs and how this impacts the epistemology, methodology and methods of their research; he puts forward a set of questions to enable a researcher to ascertain their ontological belief.

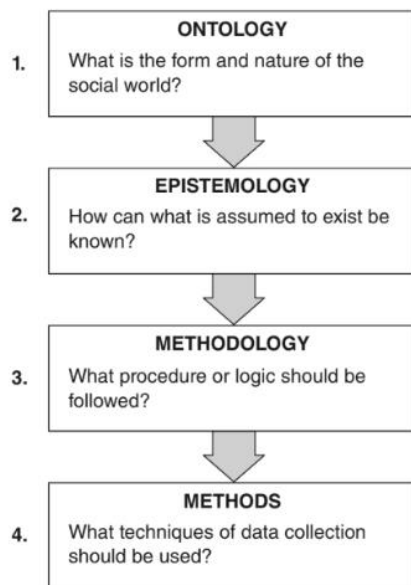


Figure 1: The relationship between ontology, epistemology, methodology and methods (Waring 2012).

This need for the researcher to understand their ontological beliefs is also highlighted by Pitard (2017) who puts forward the notion that a researcher must understand their ontology in order to seek to understand how this effects their research design. This notion, however, is countered by Hoijer (2008) who discusses the need to revisit ontological assumptions within a dynamic and complex research environment, highlighting that ontological positions can adapt and reform. This is also discussed by Gopinath (2015) who asserts that it is not necessary for the researcher to define their personal ontology, rather to understand how different ontologies, may have an impact on research design.

Epistemology

Epistemology represents how we know what we know (Crotty, 1998). It refers to the assumptions a researcher makes 'concerning the best ways of enquiring into the nature of the world' (Easterby-Smith, et al., 2012). Waring (2012) considers the same continuum with realist ontology linking to a positivist epistemology, and interpretivism associating with a constructivist approach to epistemology. His model (figure 1) is aiming to allow a researcher to focus on their own epistemological beliefs creating a lens (an overview to guide decisions) for a research paradigm to inform methodological approach and research methods. A literature review into epistemology reveals a shift in discussion towards the notion that

researchers can have a range of epistemological positions that can at times be in conflict with each other. Gopinath (2015) asserts the notion that as the problem changes, the epistemological stance of a researcher needs to adapt to best suit the current context and solve the problem. In effect, it is the question itself that determines the epistemology, rather than the researcher.

RESEARCH PARADIGMS

The paradigm creates a lens through which the researcher approaches their research methodology 'It is the choice of paradigm that sets down the intent, motivation and expectations for the research' (Mackenzie & Knipe, 2006). A paradigm is a shared set of beliefs and practices that 'lead and guide a field in doing scientific studies' (Morgan, 2007; Fazliogullari, 2012). Each paradigm, as discussed below, differs in its alignment to ontological and epistemological beliefs, it is the ontology that dictates the research paradigm (Scott, 2022).

Positivist paradigm

Positivism sets an ontological belief that there is one reality and this can be 'expressed by the variables and measured reliably and validly' (Onwuegbuzie, 2000). Positivism originated in the 17th and 18th century, the period of Enlightenment. 'During the Enlightenment, philosophers and scholars valued...objective knowledge, discovering objective, evidence-based truth through well described experimentation' (Park et al, 2020). Positivist philosophers such as Galileo and Copernicus focused on collecting data and redefining laws of nature through detailed experimentation; using application of scientific methodologies to social science (Pierce, 2005). Positivism is still prevalent in the field of clinical and scientific research. A positivist paradigm is focused on the assumption that a single reality exists, which is tangible and can be understood (Park et al, 2020), linking it with an ontological belief of realism, where the philosophical belief is of one truth. Taking the view that a Positivist research paradigm asserts the notion that knowledge is able to be gained objectively, there is one truth which is certain and congruent with reality (Park et al, 2020), gives a lens to a researcher that they are searching for an answer. Positivism aims to reach this answer and ultimate truth by achieving objectivity through separating the researcher and

the participants to reduce bias. This reliance on objectivity can diminish the importance of individual experience. It often therefore, gravitates to a dominance of quantitative research methods that are measurable and quantifiable. Within the field of vocal pedagogy, there are several studies that use a positivist paradigm as a lens for their research. Thurman (2012) completed a study in which the focus was to measure the growth of the thyroid cartilage in male and female adolescents using Laryngeal Videostroboscopic equipment and analysing the quantifiable data from the results. This was seeking an ultimate truth where the results were tangible and rooted in a realist ontology. The study did not choose to include any qualitative research methods; such as focus groups, to gather information about the differing experiences that may point to multiple truths and constructs as this did not align with the researcher's positivist paradigm. One limitation of this may be that the data does not represent how this growth in the thyroid cartilage affects the singer; does it have an impact or is it a passive change? These questions are harder to answer using a positivist paradigm.

Constructivist Paradigm

A Constructivist paradigm does not believe in one truth, but it aims to understand a phenomenon as 'the reality constructed by the individuals in their mind, described in the way they understood' (Lather, 2006). This allows for personal interpretation, thoughts and feelings and social constructs. Realities are multiple and exist in the human mind, stemming from the ontological belief of constructivism (Guba, 1990; Patton, 2002). Each individual's construct of reality is shaped by their lived experience, cultural influence and social interactions. Constructivists seek to gain understanding based on real-life experiences from the perspective of individual participants (Schwandt, 1994). This involvement of individuals aligns with a focus of collaboration, unlike that of positivists who seek objectivity through separation. 'The researched are the co-producers of knowledge...expressed through interaction with the researcher' (Pilarska, 2021). Many studies are carried out using a constructivist paradigm. Sweet (2018) carried a study looking at female adolescent voice change in choral singers. The focus of the study was gathering information from qualitative methods such as focus groups and case studies. The discussions were analysed with common responses and general themes noted. This allowed for several truths to be determined based on each individual's construct of their world view based on their personal experiences. Constructivists understand phenomenon as it takes shape throughout their research by working alongside research participants. This may pose a difficulty in terms of

insider research and personal bias, requiring the need for continual critical reflection (Pilarska, 2021).

Post-positivist Paradigm

Post-positivism emerged as a response to the perceived limitations of a positivist paradigm for educational research. Where positivism rejects the existence of personal experience and subjective perspective, post-positivism seeks to triangulate qualitative and quantitative methods to gather knowledge and promote understanding (Clark, 1998; Panhwar, Ansari and Shah, 2017). Post-positivism does not seek to find an absolute truth, it instead focuses on researching experiences of a majority (Phlips and Burbules, 2000). Post-positivism asserts that reality is subjective and that observations can have errors and be fallible. It also suggests theory and assumptions are revisable (Narwin and Mongkolsirikiet, 2012). Ryan (2006) outlines four key features of a post-positivistic research paradigm, suggesting that a responsibility is placed on the researcher to: investigate their own epistemology, adopt a learning role rather than a testing role, value problem setting rather than problem solving and refrain from looking for an overall truth. A post-positivist research project may conduct research that is both quantitative and qualitative, seeking an answer that can be measured and quantified, but accepting that this cannot be obtained without a worldview that includes objective reality. 'According to post-positivism, human being's imperfect perception and understanding skill cannot perceive this reality entirely' (Guba, 1990).

QUANTITATIVE AND QUALITATIVE RESEARCH

Quantitative Research

'The ongoing quantitative/ qualitative debate is fogged by lack of coherent definitions and by a focus on methods rather than an exploration of underlying philosophy' (Crossan, 2003). Quantitative research is often associated with a positivist paradigm, linked to the ontological belief that there is one truth (Polit et al. 2001; Park et al., 2020; Pierce, 2005). It has a focus on objectivity and is a preferred method of research where there is a possibility of collecting data that is measurable and quantifiable. This may be through measuring variables from population samples (Queiros, Faria & Almeida, 2017). Quantitative research is structured in its procedures, working to systematically gather data that is tangible, therefore routing itself

in realism (Park et al., 2020). This research approach usually begins with a specific theory, previously proposed or developed, which leads to the development of a specific and measurable hypothesis (Holton and Burnett, 2005). One study within the field of voice pedagogy which has a reliance on Quantitative research is that of Abitbol et al. (1989). This study assessed the effect of hormonal changes during the menstrual cycle on the voice. Measurable data was collected via Dynamic Vocal Exploration (DVE) along with smears of the Larynx and Cervix. The data collected was numerically analysed using computer software to test their hypotheses that the menstrual cycle and the surge in hormones have an effect on the voice (Abitbol, 1989). This study was criticised by Kadakia, Carlson, and Sataloff (2013) who noted that the results were inconsistent and did not show a clear rationale for the phenomenon.

Qualitative Research

‘Qualitative research is not concerned with numerical representativity, but with the deepening of understanding a given problem’ (Holton and Burnett, 2005). It is often associated with a constructivist paradigm and an ontological belief of multiple realities and truths. It is therefore concerned with ‘aspects of reality that cannot be quantified, focusing on the understanding and explanation of the dynamics of social relations’ (Holton and Burnett, 2005). A research project by Cayari (2018) focuses on transgender voices within the field of voice pedagogy. The researcher has chosen to focus on case studies, interviews and observations to gain knowledge of their lived experience and social constructs. Cayari put the participants at the heart of the study, keen to give them a ‘strong voice in the research’ (Cayari, 2018, p122). This emphasis on qualitative data enabled the researcher to work from a grounded theory – allowing data to emerge without setting a hypothesis (Glaser and Strauss 2017); if the researcher were to use quantitative data and align their ontological beliefs if positivism, then they would be seeking to test a hypothesis based on previous understanding. In a research field that is newer and less well researched this is not likely to be as effective at developing understanding of the phenomenon presented. Working in this Qualitative way will ‘allow [the researcher] to branch out in exploratory ways to map areas of inquiry that are underdeveloped or unexamined’ (Barrett, 2014, p. 130). A limitation may be, however, that findings are not able to extend beyond the study due to the small sample size. This limitation of qualitative data is noted by Ochieng (2009), who highlights that qualitative data is unable to be extended to a wider community or population using the same degree of certainty as would be found in a

quantitative approach. This is due to the research findings being untested in terms of their statistical significance.

Mixed Method Research

Quantitative and Qualitative research methods are often described as being polarised views, in opposition with each other. However, several writers (Webb, 1989; Polit et al. 2001; Crossan, 2003) suggest that this distinction is overstated and the triangulation of both these research methods is common in current day research – mixed method research. Polit et al. (2001) expand this further by suggesting that in order to include both research methodologies it is important to understand the underlying philosophy behind both approaches. Moreover, ‘the presence of substantial overlap between many features of qualitative and quantitative research often makes it difficult to separate qualitative and quantitative research’ (Allwood, 2012). This view is opposed by Salehi and Golafshani (2010) who highlight that both methods are rooted in different epistemological and philosophical frameworks and to include them in one study requires assumptions by the researcher into the importance of each paradigm. This notion is echoed by Dawadi, Shrestha and Giri (2021) who argue that ‘the two approaches are incompatible as they have different conceptions of reality, truth, the relationship between the researcher and object of investigation’ (Dawadi, Shrestha and Giri, 2021, p33).

RESEARCH METHODOLOGIES

Hermeneutics and Phenomenology

The terms hermeneutics and phenomenology are often used in conjunction, and somewhat interchangeably, in literature which is discussing research methodologies. Phenomenology is the study of lived experience, structured through consciousness. Hermeneutics has its origins in the same notions, but with a focus on the meaning of the experiences with language at its centre. Hermeneutic phenomenology therefore, is the study of experience together with its meaning (Lavery, 2003). This research methodology is open to interpretations and constant revision and is considered as qualitative research, aligning with

the constructivist paradigm and an ontological belief of multiple realities (Friesen, Henriksson and Saevi, 2012). Lye (1996) further justifies this connection between phenomenology and hermeneutics stating: 'Our symbolic world is not specific from our beings, especially in regard to language: we are language. Experience becomes what it is through the language' (Friesen, Henriksson and Saevi, 2012). Hermeneutics and phenomenology do have differences in their ontological and epistemological philosophies, which must be discovered before assessing the suitability of including them in research methodology.

Phenomenological research is focused on the structure of lived experience. It is descriptive, and seeks to explain the essences of these structures consciously; making the invisible, visible (Kvale, 1996). Hermeneutic research is interpretive and focuses on the influences which guide this interpretation, including the presuppositions of those making the interpretations (Barclay, 1992). This differing philosophy is most impactful on the role of the researcher. A phenomenological researcher will engage in self-reflection (journal taking for example), to 'become aware of one's biases and assumptions in order to bracket them, or set them aside.... a protection from imposing the assumptions or biases of the researcher on the study' (Laverty, 2003, p28). This notion is also recognised by Cohen et al. (2007, p. 361), stating that phenomenological researchers must 'make a concerted effort to maintain awareness of any pre-conceived notions, possible bias or subjectivity.' As a contrast to this, a hermeneutical researcher engages with self-reflection without bracketing their assumptions as these are seen as essential to the interpretation aligned with this research methodology (Cotterill & Letherby, 1993). Hermeneutic phenomenology is often used in the field of education research (Dangal and Joshi, 2020), where there is a focus on exploring the lived experience of research participants through interpretation, even if they have difficulty in expressing it for themselves (Dangal and Joshi, 2020).

Ethnography

'Ethnography is a type of qualitative research that gathers observations, interviews and documentary data to produce detailed and comprehensive accounts of different social phenomena' (Reeves et al., 2013). This is centred around a specific group or culture; 'The focus of this methodology is to examine the shared patterns of behaviour, beliefs and language within a cultural group' (Petty, Thomson & Stew, 2012). Hammersley and Atkinson (2007) outline the key features of ethnography that set it apart from other forms of qualitative research: 'The actions and accounts of the participants are studied in everyday contexts' (Atkinson, 2007); data is usually gathered from unstructured interviews and relatively informal conversations; it is small in scale and involves interpretation. Ethnography focuses

on the written product, the notated observations: the fieldnotes and the report (Flick, 2002). 'Ethnography, through the written word, provides richly described accounts of the social phenomenon being studied' (Reeves et al., 2013). Ethnography has been concerned with the notion of single sites; a distinct environment, such as a classroom or specific community (Stocking, 1992) however, this now poses a challenge; in a world of technology and cyber community, traditional classroom environments cannot be limited to a physical site (Pierides, 2010). This is echoed by Boyd (2009) stating that, 'The advent of CMC [computer mediated communication] technologies means that the study of culture is no longer geographically bound.' The adaptations required to include worldwide communities has been described as 'virtual ethnography' (Hine, 2000) and online ethnography (Markham 2005). The validity of ethnography has been criticised in terms of the inconsistency in the field notes. Rashid, Caine and Goez (2015) highlight that the following questions should be asked about any fieldwork before its inclusion in research; 'how was the fieldwork conducted? What part of the data comes from their field notes? Why and what elements of their research was captured in their fieldwork, which was not achieved through their interviews?' (Rashid, Caine and Goez, 2015). A further challenge of ethnographic research is highlighted by Thorne (1991) asserting that the contextual analysis is crucial in assessing the data gathered from ethnography 'without contextualization, interpretation and specialized finding can be dangerously narrow' (Thorne, 1991, p182).

METHODS

Research methods are described as 'the techniques used to acquire and analyse data to create knowledge' (Petty, Thomson & Stew, 2012). This is the specific ways in which data is gathered, which is guided by the research methodology and overarching research paradigm. This paper will discuss two methods of data collection that have frequently appeared in papers within the field of voice pedagogy; interviews and focus groups (Sweet, 2018; Gackle, 2006; Wolfe, 2016).

Interviews

'Interviews can be structured, semi structured or unstructured' (Robson, 2011) Structured interviews will have pre-determined questions, with responses of a superficial nature. Semi-

structured interviews are likely to include pre-determined areas of interest to guide the conversation. Unstructured interviews are exploratory and participant led (Petty, Thomson & Stew, 2012). This will usually be carried out face to face, but following the emergence of 'virtual ethnography' (Hine, 2000), may also include virtual interviews. Interviews are a useful way of gathering understanding of the phenomena that is based on the understanding of the interviewee (Payne, 1999; Kuzmanic, 2009). Kuzmanic (2009) also highlights a challenge of the interview process referring to the risk of misinterpretation between researcher and participant. This may stem from the way something is communicated by the researcher; tone of voice, unclear questioning, lack of clarity; or the way the answer is annotated by the researcher. This may be based in a different ontological belief between the interviewer and interviewee (Kuzmanic, 2009, p45). A further limitation of the interview process is in a practical sense, the limited time frame assigned to the interviewee. This may not allow for the emergence of new ideas and understandings that are the aims of qualitative research (Flick, 2002).

Focus Groups

'A group of individuals selected and assembled by researchers to discuss and comment on, from personal experience, the topic that is the subject of the research' (Sreejesh et al. 2014, p. 51). This suggests careful consideration in the selection of participants, which brings up the concern of selection bias – 'selection bias occurs when there is a systematic difference between the characteristics of those selected for the study and those who are not' (Henderson & Page, 2007). Unconscious bias in the selection of the individuals in the group may lead to a lack of validity in the results and a skew towards radical extremes of a particular view. One suggestion to reduce this is in randomisation or cohort selection (Savovic et al., 2014). An advantage of focus groups is highlighted by Stewart and Shamdasani (2015), focus groups 'enable the researcher to interact with the respondents on a direct basis, which provides opportunities for the clarification of responses' (Stewart and Shamdasani, 2015). One challenge, noted by Roulston (2011), is that participants may behave differently in a group setting dependent on the other members of the group. Liddicoat (2007) found that participants may be reserved in sharing their views or remain a passive member in the group reluctant to engage. Focus groups are further described by Casey and Krueger (1994) as 'A carefully planned discussion designed to obtain perceptions on a defined area of interest in a permissive, non-threatening environment' (Casey & Krueger 1994, p.6). This suggests a high level of involvement from the researcher in terms of discussion planning. Used as a qualitative research approach, this doesn't align with

grounded theory of enabling the data to emerge (Glaser and Strauss 2017) unless careful consideration and reflection is adopted by the researcher.

ETHICAL CONSIDERATIONS

‘Research needs to be undertaken in an ethical way, with due care and attention to safeguarding the interests of research participants’ (Punch, 1994, p89).

Insider research

A researcher often seeks to carry out an investigation into a topic they are most interested in, in an environment or with in a community they are part of (Unluer, 2012). Insider research is defined by Mercer (2007) as the researcher sharing a particular characteristic; such as community and culture, with the research participants. Insider research has some advantages, outlined by McClintock et al., (2003); insider researchers tend to be passionate about the topic which they are researching so studies tend to be committed and diligent due to the benefit to the researcher in the acquisition of knowledge. An opposing view to this is that of Smyth and Halian (2008), who put forward the notion that the insider researcher may fail to consider the importance of particular aspects of the research as they hold the same misconceptions and epistemological beliefs as the participants. They may not be as alert to the information as an outsider would be (Smyth & Halian, 2008). Scott (2022) suggests that to mitigate this the researcher’s ontological beliefs need to be analysed along with the data to understand how their philosophical beliefs and have an impact on the interpretation of data (Scott, 2022).

Confirmation bias

‘People’s tendency to search for information that supports their beliefs and ignore or distort data contradicting them’ (Peters, 2022). It can impede the formation of justified conclusions and understanding when the researcher fails to correct any previous mistaken views (Mercier & Sperber, 2017). It can allow a researcher to become too confident ‘unjustifiably favouring supporting evidence for [one’s] belief’ (Steel, 2018). Confirmation bias is believed to be an unconscious and automatic tendency to search for data that corroborates the researchers’ preconceived beliefs and is therefore difficult, if not impossible, to irradicate

(Palminteri et al., 2017, p14). If we accept that confirmation bias is unavoidable, it is the recognition of it and reflection on its influence that forms the ethical consideration of the research. Journaling and reflection are techniques that allow a researcher to do this appropriately (Palminteri et al., 2017).

Informed consent

In the field of voice pedagogy, many studies include children, particularly in my current area of interest; adolescent voice change. It is vital that all participants are fully aware of their role in the research, without coercion and with the ability to withdraw at any time. Considerations are: signed parental consent, accessible and age-appropriate information given to the participants themselves, constant checking of their willingness to be included in the study and their data to be shared (Dockett & Perry, 2011). Bourke and Loveridge (2014) put forward the potential consideration that perhaps a researcher's willingness to allow a participant to say 'no', may lead to a selection bias of participants who are more likely to say 'yes' (Bourke & Loveridge, 2014, p153).

CONCLUSION

The ontology and epistemology guide the choice of paradigm, research methodology and chosen methods. This may not be a constant; the ontological position of the researcher may adapt and change depending on the question being asked. 'The challenge is not to be able to fit one's research approach neatly into any particular category but to ensure self-reflexivity and an awareness of the various ways in which our philosophical assumptions have influenced our research' (Duberley, Johnson & Cassell, 2012, p. 30). Quantitative and qualitative research have distinct philosophical values. Mixed method research has become popular in the field of pedagogy, but it is argued that the opposing epistemological beliefs behind each does not enable them to be blended effectively (Salehi and Golafshani, 2010; Dawadi, Shrestha and Giri, 2021). Before deciding on specific research methods, a researcher must understand the paradigm and philosophy behind the methodology and the advantages and limitations associated with it. A researcher must keep in mind the ethics of the project and consider to what extent issues such as confirmation bias and insider research may have an impact, and prioritise reflective practises to diminish their effect. Appendix 1 is a draft research design to demonstrate how I would transfer my understanding of research philosophy when designing a research project based around my current area of interest; adolescent voice change.

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APPENDIX 1

Draft Research design

Question to be investigated: effect of adolescent voice change on the female singer

Ontology	multiple realities,
Epistemology	Interpretivism - each participant may have a different truth based on personal experience
Research Paradigm	Constructivist- seeking to understand their construct of reality based on the collaboration between researcher and participant.
QUAN/QUAL	Qualitative research seeking to gain understanding of personal experience.
Research methodology	Grounded theory – allow findings to guide the research. Keep reflective journal. Hermeneutic phenomenology, understand through interpretation of the described experiences. Seek to not bracket bias, but reflect on it and its impact in reflective journal. Ethnography – Consider if it's appropriate to work in a single site or include from a cyber community, how might this affect the methods. Be aware of researcher bias in the interpretation of field notes, what could have been missed.
Research Methods	Interview – open questions planned that align with ontological belief of multiple realities, constructivist paradigm and QUAL research. Focus group – consider appropriateness of selected members. Cohort selection to avoid unconscious bias of participant selection. Discussion and Observations
Ethical considerations	Insider research – working within my chosen field, participants from my studio. Informed consent – signed consent, parental from under 18s. Information given directly to participants as well as parents. Able to withdraw at any time, risk of feelings of coercion from participants. Confidentiality – including how data is stored and anonymously shared. Protection for participants – duty of care. Protection for researcher – risk of negative feelings towards past experiences, teaching methods and past trauma.