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Twelve tips on finding a research orientation: A practical guide for the novice researcher

Matilda Liljedahl^{a,b} , Per J. Palmgren^c  and Cormac McGrath^d 

^aDepartment of Oncology, Sahlgrenska University Hospital, Gothenburg, Sweden; ^bDepartment of Oncology, Institute of Clinical Sciences, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden; ^cDepartment of Learning, Informatics, Management and Ethics, Karolinska Institutet, Stockholm, Sweden; ^dDepartment of Education, Stockholm University, Stockholm, Sweden

ABSTRACT

Health professions education (HPE) research has developed into a robust scientific field, embracing a variety of methodological approaches. Although not always explicitly stated, research inquiries are underpinned by a research orientation; philosophical assumptions that guide the way in which research is designed, conducted, reported and evaluated. In a field as diverse as ours, novice researchers may find it challenging to orient themselves in epistemological and ontological considerations, that is, knowing which questions to ask. In the HPE research field, it is also not unusual for researchers to move between research traditions, that is, being a paradigmatic crossover. This article therefore provides twelve practical tips for novice researchers on finding a research orientation for their study. In summary, we suggest that novice researchers engage in a reflective and exploratory journey around why and how they attempt to address a certain research problem. We further urge that every research inquiry be conducted intentionally and coherently, and suggest that paradigmatic conversations and reflections continue throughout the research career. In conclusion, we hope that the twelve tips provided herein will assist not only novice researchers but also more experienced researchers engaging in paradigmatic crossings.

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Introduction

It has been argued that researchers need to reflect on and define the philosophical point of departure and orientation of their research. They should also align their research to a coherent research paradigm or internally consistent way of thinking about aims, research questions and data collection and analysis [1]. Awareness of research orientations involves reflecting on how and why researchers engage with research objects and methods [2]. We argue that reflection and transparency about why and how we engage in research are crucial and have the potential to enhance various research methodologies aimed at investigating and advancing knowledge in many fields, not least health professions education (HPE). However, many novice researchers may find research orientations challenging because they align with more formally arranged paradigms embedded in philosophical underpinnings [1]. Many guides introduce ‘paradigms of research’ [3–6], but they are often presented in a decontextualised manner as ready-made constructs. Therefore, we postulate that it may be more useful to approach research as a novice through a gradual acquisition of both the language and mindset associated with the field. Additionally, support may be required to grasp epistemological considerations, enabling researchers to know which questions to ask themselves. In this article, we therefore provide twelve tips to assist novice researchers in finding a research orientation for their study.

What is a research orientation?

A research orientation encompasses the researcher’s philosophical assumptions and beliefs that guide the way in which the research topic is understood and explored (e.g. which method is most suitable). A research orientation therefore, delineates the way in which a researcher understands how the world is constituted and how people both engage with and experience it (ontology) [7]. It also involves commitments to the different kinds of knowledge that can be acquired about the world and the extent to which this knowledge can be said to represent objective and factual claims about the world (epistemology) [7]. A research orientation also comprises the methodological stance chosen, the theoretical approach taken and the choice of a suitable method for inquiry. A research orientation may be unique in every single study as it can be deliberately chosen based on the research question and desired outcome of the study, and typically involve alignment with a prevailing research paradigm.

A research paradigm is usually regarded as a basic system or worldview that guides the research process through combining a set of philosophical underpinnings about the world [7]. Paradigms are competitive, and their philosophical underpinnings are potentially incompatible. To paraphrase Thomas Kuhn, the scientific tradition that emerges from a scientific revolution is not only incompatible but often actually incommensurable with that which has gone before [8]. The prevailing paradigm influences the way we interpret science, which

CONTACT Matilda Liljedahl  Matilda.liljedahl@gu.se  Department of Oncology, Sahlgrenska University Hospital, Gothenburg, Sweden.

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can be evident in the associations made with different concepts or the way we evaluate research. For example, in a positivist paradigm, a case report may be regarded as a methodology providing one of the lowest degrees of evidence and may be seen as *weak* [9], whereas a case study in a constructivist paradigm is considered a robust and established research method [10]. Although case report and case study share semantic similarities, they convey distinct meanings across various paradigms. As a result, for novice researchers with limited experience and understanding of the concepts, methodologies, and terminology used in different scientific traditions, this can pose significant challenges. Consequently, we risk naively labelling some research designs as faulty, poorly executed or lacking in rigour when, in fact these designs simply employ alternative research paradigms [1].

It is not unusual for a researcher to be unaware of the paradigm in which they operate [11]. As long as there is no attempt to cross over to a competing paradigm, paradigmatic conversations will often remain superfluous [12]. However, each paradigm exhibits inherent strengths and limitations, which determine their appropriateness for a particular research context, and it is therefore crucial to consider one's chosen research orientation [1]. In HPE, it is not unusual for scholars to cross over from one research tradition to another, most commonly from a biomedical tradition to more constructivist orientations grounded in the social sciences. Importantly, researchers can work within different research orientations depending on the research question, but they need to root their inquiries in a coherent system of philosophical underpinnings [13]. Consequently, researchers must diligently evaluate their research inquiries, objectives, and the philosophical underpinnings that support their work.

In this article, the twelve tips will be illustrated and contextualised using Sandra as a fictional researcher.

Sandra is a healthcare professional working with patients with colon cancer. She began her PhD project two years ago. In conducting her clinical work, she read articles employing various methodologies – such as randomised controlled trials, retrospective studies, surveys, and qualitative studies – and she is open-mindedly considering how they may be used and combined. Her first studies involved a cohort of patients with colon cancer during follow-up treatment with chemotherapy, where she investigated the prevalence of peripheral neuropathy. Her supervisor suggests that she add a qualitative interview study on coping strategies after cancer treatment. Sandra likes the idea but also realises that combining quantitative and qualitative methodologies in her thesis involves doing research in completely different ways, so she finds herself a bit lost on how to think about different methodologies and their traditions.

In the following twelve tips, we provide guidance to Sandra on how to start reflecting on the research orientation in her studies and the underlying assumptions directing her course of actions. In Sandra's case, she seems to be about to cross over from a medical research tradition to a divergent orientation.

Tip 1

Consider the nature of your interest

To start, it is a good idea to consider your scientific interest and, more specifically, the nature of the phenomenon of

that interest. It is common to hold an understanding of a phenomenon based on one's experience and the current practice within which one is working. These practices are situated in historical practices, norms, and values that may or may not reflect the current status or discussion in the scientific field. Scientifically investigating a phenomenon typically requires one to consider which aspect of this phenomenon is of interest in a given situation. In Sandra's case, she has researched the prevalence of peripheral neuropathy as a side effect and will now focus on coping strategies. The nature of these phenomena may call for different methodological approaches, and conscious decisions need to be made [14]. The prevalence of a side effect such as peripheral neuropathy calls for a clear definition of the side effect, some kind of measurement or assessment tool for documentation, and calculations to define the prevalence. Furthermore, coping strategies may be seen as part and parcel of the human experience of being ill, something unique to individuals and dependent on previous experiences. A good start is to consider the nature of your specific interest in detail and reflect on the consequences for your research process.

Tip 2

Get to know your research field

In some fields, concepts are well established and defined. For most biomedical scientists, there is broad consensus on what bacteria are or when a condition fulfils the criteria for, for example, colon cancer. In other fields, definitions are not as common or may still be emerging, as the scientific community has yet to reach consensus [15]. The novice researcher, therefore, needs to orient themselves in the research field regarding central concepts. For Sandra, just as she needed to design her initial studies based on the current definition of peripheral neuropathy, she now needs to consider what is meant by a 'coping strategy', for example, whether a certain number of strategies are described or whether the concept is described in more general terms. Further, she needs to orient herself in the existing literature of her new interest more specifically and ask herself how the phenomenon has been researched before, that is, getting to know her research field. Review articles offer a good overview of how complex fields are explored and provide a natural starting point. Another suggestion is to initiate a discussion with a colleague, supervisor or someone else with experience from the research field or attend a scientific meeting or conference on the subject.

Tip 3

Consider the range of possibilities for your study

In Sandra's previous studies, she might have used some kind of quantitative measurement to determine and quantify the prevalence of peripheral neuropathy. For her coming studies, however, there are a range of possibilities available, and Sandra needs to consider whether existing measurements will capture the desired exploration or if they are yet to be obtained. Furthermore, when investigating and exploring unique human experiences, reducing the human experience to quantifiable units may not yield

valuable insights [16]. The fact that a unique experience exists can be of scientific interest, regardless of how common it is. Both quantitative and qualitative research can be conducted in various paradigms and are more or less common in specific paradigms. While quantitative methods are more common in positivist-oriented approaches to research, qualitative methods are typically found in constructivist approaches [5]. Therefore, consider when measurements may fall short, and reflect on what is meaningful to count.

Tip 4

Reflect upon how truth and reality are constituted in your study

Reflecting on your research orientation involves taking into account concepts like truth and perceived reality. Truth and reality relate to how the world is constituted and what can be known about it, commonly referred to as ontology [7]. The law of gravity is considered by most as an unquestionable reality concerning the physical nature of Earth. Still, while our understanding of gravity continues to develop, the existence of gravity, per se, does not need to be discussed or called into question, and not many would argue that an alternative or complementary reality about gravity exists. Thus, regarding the physical nature of Earth, there is one reality that can be known. Likewise, many phenomena are considered to be constituted in a way that they may be fully or partially understood. Conversely, others would argue that realities in the world are constructed, and that people perceive reality in their own individual way. In such cases, 'truth' may not be a relevant topic for discussion. Returning to Sandra, she might argue that there are some 'truths' to be known about colon cancer and that a randomised controlled trial, for example, may assist in revealing these truths. However, her patients' experiences and narratives about their experience of colon cancer may be regarded as unique and personal, which means that there is not a single 'truth' but instead commonalities across a groups' experiences. Reflect upon how truth and reality may constitute themselves in your study. Questions about truth can be found in the epistemological and ontological stances of paradigms, and further reading may be needed in this area [4,5].

Tip 5

Be mindful of the language used in your research field

In the absence of an explicit philosophical positioning, word choice when describing the methodology, results and conclusions can indicate the research orientation [1,16]. Examining background literature, especially review papers, offers a great opportunity to analyse the language used in a research field. Also consider the criteria that a research article uses to determine its quality of research, usually found in paper sections on 'methods', 'limitations' or 'methodological considerations'. The way in which authors discuss methodological rigour in their work may provide clues about their research orientation, as the words used often imply value of some kind [2]. It is important to recognise that not all published literature is situated in a specific paradigm, and that although phrases are used and

discussed, they are not always applied coherently. For Sandra, who attempts to employ various methodologies, she may also want to pay attention to her own language and the way in which her choice of concepts and words tells a story about her current paradigmatic position [17]. However, as a novice and crossover researcher, she needs to take into account that the current way in which she talks (and thinks) about her research may change along the way.

Tip 6

Reflect upon the prevailing paradigm within your field

Having paid attention to the language of your research field, you might have sufficient knowledge to reflect upon the existing paradigm within your field. What are the commonly applied methodologies in your field, and what might they reveal about the field's paradigmatic stance? Available guides can assist in labelling the paradigm [3–7], even if a field is not necessarily homogenous and coherent by nature. It might be worthwhile to contemplate developments in your field. In HPE, we identify a strong methodological development, as for example illustrated in the shift from 'saturation' to 'information power' as a means to justifying sample size in qualitative research [18]. Likewise, within quantitative research and the post-positivist tradition, a significant advancement has emerged, emphasising the importance of presenting effect sizes and their associated confidence intervals in addition to merely reporting p-values [19]. Being sensitive to these continuous developments and enhancements of our research methods to maintain rigor can be challenging, but credible sources to consider are editorials, perspective papers, commentaries published in journals, and discussions held at conferences relevant to your field.

Tip 7

Attempt to phrase an aim or research question

A good study is coherent in terms of a specific and well-formulated aim and/or research question. It should have a suitable methodology, clear results answering the question posed, and a well-balanced discussion analysing the results in relation to the scientific literature. A suggestion is to carefully consider the phrasing of your research question and the clues your phrasing provides concerning methodology and research orientation. Thereafter, consider the ways in which and with what data you will be able to answer the aim of the study. For example, Sandra may choose to formulate her research question either as 'What coping strategies are used for patients after colon cancer treatment?' or 'How do patients describe their path back to normal life after having colon cancer treatment?' These two questions may guide Sandra into slightly different research orientations. The first question attempts to identify predefined coping strategies, while the second inductively searches for patients' stories to define the coping strategies used. Always be prepared to discuss your preliminary research question with supervisors and colleagues. This can help you discern your preferred orientation for a specific study.

Tip 8***Consider how the application of a method may vary***

It is not unusual for a certain method or technique to be employed within various research paradigms, which means that it is employed in different ways while, at first glance, appearing to be similarly applied. An example is content analysis, which is a commonly applied data analysis method employed in a number of methodologies, although with various underlying epistemological and ontological assumptions [20]. It can be used as a quantitative method to explore frequency and proportions of statements as well as a qualitative method to construct categories and themes containing descriptive and/or interpretative content [21]. Additionally, there are various ways in which data can be interpreted depending on the qualitative method chosen. Thus, it is imperative to not just seize the first viable technique at hand but to meticulously evaluate your application of the specific method and its paradigmatic alignment [17]. For a novice or crossover researcher, guidance from supervisors and the methodological literature is of utmost importance in applying your preferred method in a coherent way. Additionally, to attend a course in your preferred method is more or less necessary to provide the basic skills needed when employing a previously unfamiliar method.

Tip 9***Reflect on how your research question relates to your preferred overarching research outcome***

Another approach to determining the research orientation is to reflect on the anticipated research outcomes, as this may elucidate the nature of your interest and its underlying assumptions. Sandra's studies identified the prevalence of the side effect of peripheral neuropathy, which can be used to enable prediction and can be considered a generalisable research outcome. For example, predicting which patients may respond to a certain treatment means that the response to treatment is considered predictable, albeit through undiscovered methods. However, some phenomena may not be predictable. In Sandra's future work exploring the uniqueness of coping with illness, she may encounter challenges in identifying generalizable outcomes. Instead, she may draw a rich picture of contextualised human experiences and thereby give examples of how patients may cope with illness, which can serve as a basis for reflections for her fellow practitioners. Another approach would be for Sandra to attempt to change practice by developing models or programmes for improvement. She might want to use her study to design a support programme for patients with colon cancer. In this case, a critical realist perspective might be useful [22].

Tip 10***Aim for coherence and methodological rigour***

Having come this far, it might be time to put some labels on your research orientation and its aligned paradigm. If you are intrigued by the talk on predictions, objectivity and significance, you may want to look further into the positivist or post-positivist traditions [23]. By contrast, constructivist traditions acknowledges that people can

experience their being in the world in radically different ways [24]. Should your interest lie in politics, power structures, or the identification of practical solutions, you may instead seek out critical theory, pragmatism or critical realism [22]. As mentioned earlier, coherence in a research study is important for quality, and therefore, it is important that your study is designed in a way that adopts a coherent set of assumptions and thereby allows for methodological rigour. As a novice researcher, it may be advantageous to work within a chosen research orientation, which involves conducting a number of studies within the same paradigm. Many experienced researchers may very well handle paradigmatic crossing from one study to another, but it is imperative to stay consistent and coherent within your current choice of research orientation to safeguard rigour and academic integrity [1]. Nonetheless, we advocate for both novice and seasoned researchers to explicitly identify and name the research orientation in their scientific work.

Tip 11***Find paradigmatic friends***

We argue that no existing paradigm should be considered superior to another. Instead, they should be viewed as serving different purposes and assisting in answering different research questions. However, in specific fields, there is usually a dominant paradigm that determines standards, practices, funding, career requirements, and other aspects. Therefore, being a paradigmatic outsider or crossover may require spending considerable time and energy defending and arguing your choice of research orientation. If you are an outsider or crossover, we suggest that you attempt to find allies in colleagues who can be your paradigmatic friends and offer peer support in battling paradigmatic conversations. Additionally, paradigmatic friends can be invaluable sources to receive feedback from throughout your research process. Sandra, for example, may find peer support in a fellow PhD student or supervisor or, if available, joining a suitable community of researchers to discuss and elaborate ideas, assumptions and methodologies.

Tip 12***Repeat tips 1 to 11***

Finding your research orientation is rarely a linear process to be completed in a narrow time frame. In our experience, tips 1 to 11 need to be revisited repeatedly during a PhD project and throughout a research career. Developing as a scholar during a career can be a challenging yet highly intellectually stimulating journey, thereby offering opportunities for growth of endless potential. Embracing these challenges can lead to a deeper understanding of complex subjects, the development of critical thinking skills, and the ability to innovate and inspire others.

Conclusions

This guide sought to assist novice researchers and paradigmatic crossovers in finding a suitable research orientation for their study. Sooner or later, researchers will encounter with alternative methodologies and paradigms in their

research career. With the rise of interdisciplinary research, paradigmatic conversations about research orientations need and should be held in most research groups and institutions. We argue that it is neither a simple task nor a quick fix, but rather a demanding and strenuous process that may or may not be in conflict with the orientations of the research supervisor, group, research field, or community. Research is full of contradictions, truths, rights and wrongs, and grasping these dynamics is an everlasting learning trajectory. We sincerely hope that these twelve tips can serve as inspiration, guidance, a starting point for discussion for researchers on all levels.

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Notes on contributors

Matilda Liljedahl, MD, PhD, Associate professor of health care education, Sahlgrenska Academy, University of Gothenburg, Sweden.

Per J. Palmgren, PhD, Associate professor of medical education, Karolinska Institutet, Sweden.

Cormac McGrath, PhD, Associate professor of education, Stockholm University, Sweden.

ORCID

Matilda Liljedahl  <http://orcid.org/0000-0003-2011-8180>

Per J. Palmgren  <http://orcid.org/0000-0001-7499-9329>

Cormac McGrath  <http://orcid.org/0000-0002-8215-3646>

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