FOCUS ON METHODOLOGY

The why, the what and the so what of a qualitative empirical research article

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Abstract

The medical literature is dominated by clinical and laboratory sciences, and therefore, the social studies of medicine genre will be harder to decipher for health professional education researchers from a clinical background and other similar newcomers. In the medical literature, the typical format for articles follows a strict sequence known as Introduction, Methods, Results and Discussion, or simply the IMRaD format. In social studies of medicine, however, qualitative research articles are typically less clearly structured. Headings and subheadings are used to communicate the argument but do not necessarily carry titles that easily match the IMRaD elements. This is made more confusing when many qualitative researchers propagate a sense of "anything goes" (more or less) in terms of structure in order to give space for creativity. However, while it is true that there are not strict rules, the idea that there are no conventions at all can sometimes lead novice qualitative researchers astray, and they can become overly creative. Articles in the field of the social study of medicine (especially anthropology, sociology, science and technology studies (STS) and qualitative public health) do, in most cases, follow a particular logic and structure. This paper is about that hidden structure and the logic that justifies it. Its aim is to help newcomers to the field to build their arguments well and to assist people in other areas of medicine to better understand qualitative research articles.

Keywords: health professional education; academic writing; qualitative research

Introduction: Making sense of qualitative research

Over the years, medical research has developed a strong preference for a particular format for journal articles. This format is known as IMRaD, which is an acronym for Introduction, Methods, Results and Discussion. It suggests a particular sequence of elements but also a strict division—authors are not supposed to discuss in the results section but merely present findings. This format is typically clearly articulated in article

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submission guidelines, and it generally suits quantitative research well. Researchers who have conducted a laboratory experiment or a randomised controlled trial should present the results before they begin interpreting their implications. However, this format and this sharp distinction do not fit well with broader qualitative research approaches (Malterud, 2001). Such research needs to have a clearer theoretical articulation to explain the key analytical terms and situate the research in existing knowledge—and rather than having results separate from interpretation, a good analysis *is* an interpretation. This interpretation should draw on theoretical concepts and relate the interpretations to existing literature (Timmermans & Tavory, 2012). In health professional education (HPE), qualitative research nevertheless tends to draw on the IMRaD format, but as has been noted elsewhere, HPE research struggles with presenting interpretive approaches with appropriate rigour (Varpio et al., 2017).

Qualitative research articles can sometimes appear to the uninitiated as less structured and rigorous despite their academic credentials. Headings and subheadings are not always easy to decipher, as they are not necessarily called "methods" or "results". It makes it difficult for many with scientific training to read this literature. In our experience, it even leads some to reject otherwise important knowledge simply for not conforming to the IMRaD format. It is unfortunate for medical research and for the health services, which are both in dire need of diverse forms of knowledge to understand the current challenges of healthcare and HPE, for example, topics such as diversity and inclusion in education (Gishen & Lokugamage, 2019), changing professional roles (Wadmann et al., 2019) and organisational dynamics relating to new technology (Brown & Webster, 2004). None of these topics can be understood with only quantitative research methods (Janes, 2017).

To build a bridge between mainstream medical research and the qualitative research tradition, this article explains what we call the "hidden logic" guiding many qualitative empirical research articles. Interestingly, in many ways, the reasoning that underpins a qualitative research article is very similar to that underpinning all research articles, but we find that many coming from the IMRaD tradition struggle to identify this logical flow in others' work. Sometimes they also fail to articulate it within their own research, as they expect the IMRaD format to do the job without reflecting on the logic justifying the sequence of the elements. We thereby aim to help newcomers to the genre to understand better how to construct an argument as well as to decipher the logic of the important articles already published. It might even help some IMRaD users to reflect on the way they build arguments.

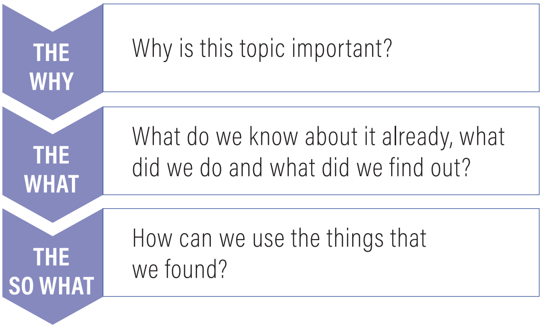
Many—probably most—articles in the field of the social study of medicine (including anthropology, sociology, science and technology studies and qualitative public health) follow a particular logic and structure that is hidden underneath headings with different names. Sometimes, qualitative research scholars suggest that if the argument is convincing, "anything goes" (more or less) to provide room for creativity as well as the unexpected, which are key values in qualitative research (Ballestero & Winthereik, 2021). This can lead the less experienced researchers astray and generate detours when authors try to be overly creative and then fail to build a convincing argument. Often, new researchers think that they are inventing a structure, though there are structures of argument scaffolding most articles. We wish to elucidate this hidden structure of most qualitative HPE (and health) research—and the logic that justifies it—because we believe that awareness of this logic can be helpful for writing as well as reading this type of research. We close this paper with a section for novices on getting started.

The hidden structure: A particular sequence … and logic

Academic publications—quantitative and qualitative—are all *arguments* in the sense that they present a claim with some sort of support or proof. To be a valid argument, the support needs to be logically tied to the claim. When building on empirical research, these arguments are typically structured so that a research objective is first explained and justified, then placed within existing literature explaining what is already known about the topic, before methods and findings are presented. In the end, the relevance of the findings is stated. This way of thinking also informs the IMRaD format. It means that practically all empirically based arguments contain three elements: the why, the what and the so what (see Figure 1). While these three elements can be seen as shared by both quantitative and qualitative research, they come across in different ways.

Figure 1

The Why, the What and the So What



It is particularly helpful to think explicitly about these elements when you build an argument that does not align well to rule-based formats such as IMRaD. In fact, when building a qualitative research argument, these three elements become essential. They form the logic that scaffolds most qualitative empirical research articles. The three elements—why, what and so what—are typically sequenced in exactly this order; they comprise a rationale. There is endless variation in how people present these elements,

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but they will (or should) be there in some way. These elements inform the sequence of the various sections of articles. In most cases, these sections will be introduction, theory, methods, analysis, discussion and conclusion. They correspond with "the why", "the what" and "the so what" as described in Figure 2.

Figure 2

How the Rationale Informs the Typical Elements of a Qualitative Article

The Why	The What			The So What	
Introduction	Theory	Methods	Analysis	Discussion	Conclusion

The introduction provides a justification for the article, or *the why*. The purpose is to convince the reader that the article deals with a relevant question. The introduction will typically also foreshadow what is to come, but this should serve as an appetiser that helps to focus the reading, which is again about justifying the read. Some articles will begin by using the literature to argue the need for the reader's attention. Others, although this is rare in HPE research, will begin with an empirical snippet that captures something essential about the argument. The "problem gap hook" heuristic—where you state the problem, describe what is missing in the field and suggest why what you are proposing will make a difference—is a common approach in HPE research (Lingard & Watling, 2021), but there is no single right way to begin an article. Just remember that a "gap" is never a justification if it stands alone—there are many things that have not been studied and no way everything could be known, hence you always need to explain why the "gap" is worth filling. Remember also that you are justifying your problem—*the why*—so avoid preempting your findings and don't state them as well-known facts, something new authors occasionally do. Unless your introduction builds an interest, the reader will not continue. Thinking of *the why* helps you to focus on creating interest.

After having established *the why,* articles typically present *the what*, beginning with some form of theory or simply "existing literature". This can be in one or several sections. The point is to describe what is known about the topic already, to clarify which type of phenomenon the authors think they are dealing with and to provide an adequate understanding of the concepts needed for the analysis. If, for example, you are studying feedback in clinical supervision, you use the literature section to clarify the particular phenomenon of interest (for example, trust in feedback in clinical supervision) as well as what you mean by words such as "feedback". This is critical for presenting the focus of the article but also to frame how the qualitative data analysis will unfold.

Theory helps place the phenomenon of study in a wider literature from which authors can draw on existing knowledge. It also lays the ground for the contribution of the article. Sometimes the theory section will have both a description of existing approaches and an alternative new concept or approach that has not been used to analyse this phenomenon before. Then the section is often separated into two sections, each with their own heading. The theory section ideally can help explain why particular methods that have not been studied are relevant to investigate. Innovative use of particular methods might well be linked to justified gaps in the literature. The methods section could also be thought of as the "how", but when we present it as part of *the what*, it is to underline how important it is to see theory, methods and analysis as one tightly knit package with strong internal coherence. The analysis itself, which we do not elaborate on, can take an endless amount of forms, but to be convincing, it needs to follow clearly from *the why* (why is it important to know) and be transparent (following the methods description).

The why poses a question, and *the what* provides an answer to this question, so last of all is a discussion and/or a conclusion explaining the value and utility of *the what*. This is what we call "the so what". Here, the authors articulate the contribution to the existing literature. Many qualitative research articles set in healthcare will have both an empirical contribution specifying new knowledge of relevance to actors in the studied field and a theoretical contribution specifying how this study contributes to existing knowledge in the research field as it was outlined in the theory section(s). In Figure 3, we present a schematic overview of these elements with comments on the variations. When writing (or reading) an article, we suggest that Figure 3 can help build awareness of where you are in the overall argument. Recalling that *the why*, *the what* and *the so what* are closely interlinked can help you to retain overall coherence in your argument and assess the coherence of the arguments of others.

Remember, we suggested that papers present *claims.* It implies that rationale and justification are key all the way through. Often in health research, the IMRaD format is so taken for granted that authors forget to explain their rationale properly, but when using other headings, the way the argument is developed and articulated is of pivotal importance. The hidden structure—the three elements in their particular order—is like a string on which all of the narrative pearls must neatly hang.

Figure 3

The Elements of a Qualitative Article and Their Hidden Structure

Section		Key Points to be Addressed	Comments
THE WHY	**Introduction**	Problem	Research is not just about a gap in the field—just because someone hasn't done something doesn't mean it needs to be done. You need to justify what you are looking at. Formulate your problem clearly and explain what makes it important. Why is it important? Who is it important for?

Section		Key Points to be Addressed	Comments
THE WHY	**Introduction**	Place (where in the world)	These elements provide a sense of why your study addresses the problem. These can often be combined in a short paragraph of the type "Based on interviews with general practitioners in Denmark, and building on a Foucauldian framework, we argue that ..." Sometimes justification of the fieldsite (or why you did the study in, e.g., Denmark) needs its own explanation. Although this is uncommon in HPE, some social science articles begin with a quote or observations from fieldwork. The purpose is to frame the thinking around a) the problem and b) the argument you are making.
		Indication of method	
		Indication of theory	
		Foreshadow argument and structure of the article	
	Background	If you need to say something further about the particular empirical rationale for the case	This expands upon the foreshadowing in the introduction. There is a temptation to always want to give too much background. Think about whether you could actually know all of this without doing the study and whether it might actually be better placed as an analytical section. How much do you think the reader needs to know in order to grasp WHY your main argument is important?
THE WHAT	**Literature**	What we already know about the problem	What main insights and approaches are there with respect to the problem in focus?
		What theoretical concepts we need for the analysis	Present the core theoretical inspirations that comprise your intellectual home with respect to the problem. You might have theory at different levels, some of which are key to your own thinking and some of which you borrow from other traditions. Make sure to order these logically—readers should know who are your best friends and who are your more distant acquaintances.
		What we thereby do not know but need to explore	The theory gap may well have been foreshadowed in the introduction. Here you provide more detail and can mount an argument for your approach—why you need to do what you did to explore what had not yet been explored.
	Methods	What we did to find out about what we did not know (theory) but need to know (*the why* from the intro)	Frame your choices in light of the problem and the knowledge gaps.
		Materials (e.g., texts) and where they came from	Be transparent about the materials that are being analysed. Remember that anything you present in the analysis is materials (e.g., policy documents and not just interviews). If you collect material from participants, provide a description and a rationale for who your research participants were.
		Analytical methods	A sentence or two about how you analysed the material, e.g., by outlining three key coding questions that form the structure of the subsequent analysis. It may also be necessary to mention other logistical details, e.g., transcription of interviews and translation of language.

Section		Key Points to be Addressed	Comments
THE WHAT	**Analysis**	The substance of your argument	No specific rules apply, but this is the main part of the article, the meat of it all. It helps the reader if you provide a clear structure with incisive arguments around concepts or theoretical points.
THE SO WHAT	**Discussion**	This is if you have points from several analytical sections that you wish to take to a different level of abstraction—or if you wish to discuss their (political, theoretical, methodological) implications	Here you draw the argument together and reflect on *the why*, what you found, how it contributes to what we knew in advance (the theory element of *the what*) and reflect on what it can be used for (*the so what*).
	Conclusion	This contains a statement about what you found (summary) and what it means—how you suggest using those findings	If you have a discussion, you make the conclusion short, or you do not make a conclusion section but let the last paragraph serve as a concluding but punchy statement. With no discussion, the conclusion should typically be longer.

Getting started on your first article

Even with awareness of these three key elements of an academic argument and their internal interdependence, it is still difficult to write a paper containing qualitative data analysis. Therefore, we provide some additional comments that may serve as a form of contextual guidance for those embarking on their first qualitative research journal article. We also provide two templates for authors to review their own work (Figures 3 and 4). Of course, these templates are meant to steer, not dictate, and to prompt deeper thinking rather than adherence—which is what qualitative research should be about!

The first thing to remember is that most articles are short. They cannot contain everything interesting in your empirical material. They must present an analytical contribution. They must constitute a neatly packaged argument. If you have conducted a qualitative study, it will typically contain several important stories. It is, therefore, important to remember that you are not writing a book. You are mobilising material from the field that speaks to a particular literature. Therefore, it is a good idea to first sketch out different topics for several articles that might be written based on your material before writing the first one so that you can reserve some points (that might be "darlings" but do not belong to this specific argument) for other articles and, thereby, remain focused. For some, it is useful to write an abstract first (knowing that it will change) to clarify the overall narrative to yourself before you write the text.

When writing the analysis, remember the connection to the theoretical concepts as well as the methods. It is not just a technical issue; it is also about bringing the material to life. Show your claims and remember to tell what you are showing. State clearly up front what you are arguing in the analysis. There are books about stylish writing (Sword, 2012), and most HPE research students will be pointed in the direction of Lingard and Watling's (2021) book, *Story Not Study: 30 Brief Lessons to Inspire Health Researchers as Writers*. There are all sorts of "how-to-write" texts, and the point, again, is that there is no one singular right way to present a text, but some ways actually do work better for the majority of people than others. Do not expect as a novice to automatically *know*: if you are a new writer, it is good to read about writing and reflect on what you yourself consider to be *good writing* in the field.

Note also that there are genre differences not only between disciplines but also between specific journals in the same discipline. Decide relatively early on the primary target journal. You may wish to have a backup journal with similar readership and word count just so that you do not panic if the article is rejected and do not have to rewrite everything to fit another journal. Picking a journal is important also because it is difficult to write well without knowing your audience. Read the author guidelines carefully! Some journals list style requirements. Also, before you submit, study what the journal has published in the preceding years, not only to make sure that you cite relevant articles (previous authors on the same topic are likely to become reviewers and it is also a way of showing the relevance of the article for the journal) but also to understand the genre and the relative emphasis that editors place on theory, empirical presentation and practical implications.

Figure 4

Key Considerations for a Qualitative Article: A Self-Assessment Template

Article Section		**Key Points Contained**	**Your Responses/Comments**
THE WHY	**Introduction**	What is the problem? How is it justified—**why is it a problem and for whom?**	
		How do you introduce (and justify): • place (where/when the study is situated) • the method • the theoretical inspiration • the main argument	
	Background	Is this section needed? What are the essential elements?	
THE WHAT	**Literature and Theory**	How have you clearly described the existing knowledge about the problem?	
		How are the key concepts used to interpret the data presented and explained? If they are not your own concepts, where have you credited and explained them?	

Article Section		Key Points Contained	Your Responses/Comments
THE WHAT	Methods	Have you described what you did? When, where, for how long, with whom, selected how, in which language, etc.?	
		Have you described which materials you used and details about your research participants?	
		How do you convey your analytical approach—what are the steps of the analysis?	
	Analysis	How have you described the way the analysis is structured? In what ways do you follow that structure? How is it made discernable for readers (clear headings and signposting)?	
		How do you use your key concepts in the analysis? How do any theoretical ideas align with the literature section?	
THE SO WHAT	Discussion/ Conclusion	Have you clearly stated what you have found (summary)? How does this address the problem? How do you describe how you expand upon the existing literature and your suggestions for who should use these findings and in which way?	

Concluding remarks

The medical field needs scholars who are able to read, decipher and also construct arguments other than those communicated in the standard IMRaD format. It is also important to engage forms of knowledge that do not fit standards derived from laboratory science and clinical trials. Similarly, if arguments are dismissed because reviewers—or readers—think it is a mistake or outright fault to deviate from the IMRaD format, important knowledge does not reach those who need it. Conversely, when more people appreciate the hidden structure, it can widen the space for such knowledge in medical research. This has been the objective with this introduction to the why, the what, and the so what of an empirical qualitative research article. Readers may use Figure 3 to get an overview of the typical elements or Figure 4 to run a check on their own article to see if each element is clearly and adequately considered. Indeed, some readers might even find Figure 4 useful when struggling to decipher other qualitative research articles, as it might help to see how structure plays out under other headings.

It is important to say that this description is not meant to kill originality, experiments and playfulness. Some observers have expressed concern about what they call the "typification" of articles (Kaltenbrunner et al., 2022). We hope, however, that by being explicit about the "type", we can do *conscious* experiments, that by knowing the classical type, we may better assess when we need to develop new "types", different genres or divergent formats. Good luck!

N.B. Readers may have observed that even this little introduction to the implicit structure of academic arguments first explains *why* it is important to know the hidden logic, then outlines the logic (*what* is worth knowing) and finally states how it can be used (*so what*).

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