

## Qualitative Dataset Template

### Title [H1]

### Reasoning with qualitative data: Using retrodution with transcript data

### Abstract ( [H1 heading level])

This dataset was collected as part of a research project designed to understand students' and educators' views about academic writing. The data is provided by Dr. Christian Beighton from Canterbury Christ Church University's Department of Post-Compulsory Education in the UK. The example focuses on how academic writing is described by interviewees and shows how we can reason about data in a range of ways. We discuss three common approaches to reasoning, comparing deductive and inductive approaches and shows how a retroductive approach can be used with this data to develop original perspectives on qualities data. The dataset file is accompanied by a teaching guide and a student guide.

### Student Guide [H1]

#### Introduction

This example illustrates how different forms of reasoning can be used to analyse a given set of qualitative data. In this case, I look at transcripts from semi-structured interviews to illustrate how three common approaches to reasoning can be used. The first type (deductive approaches) applies pre-existing analytical concepts to data; the second type (inductive reasoning) draws analytical concepts from the data; the third type (retroductive reasoning); uses the data to develop new concepts and understandings about the issues.

The data source [—](#), a set of recorded interviews of teachers and students from the field of Higher Education [—](#), was collated by Dr. Christian Beighton as part of a research project designed to inform teacher educators about pedagogies of academic writing.

#### Interview transcripts

Interviews, and their transcripts, are arguably the most common data collection tool used in qualitative research. This is because, while they have many drawbacks, they offer many advantages. Relatively easy to plan and prepare, interviews can be flexible: they are usually one-to one, but do not have to be so; they can follow pre-arranged questions, but again this is not essential; and unlike more impersonal ways of collecting data (e.g. surveys or observation), they can increase trust, between the researcher(s) and their subject(s). They can, thus, provide richer data, allowing the researcher to respond to interviewees' questions and dig deeper or focus on particular areas of interest, individual experiences or issues in depth. The interview transcripts which result can also be studied for a variety of features in different ways.

Still, interviews have their risks: transcripts are always part of a process rather than simply the product of a set of questions; any questions must be carefully developed, and the way, place and time-frame in which the interview will be conducted must be carefully considered upstream. Perhaps most importantly, interviewers must recognise that interviews involve a degree of ethical risk: qualitative researchers are never quite sure exactly where an interview will lead, and it is vital to obtain agreement from all parties concerned about how the interviews will take place and what will happen with the data. This means not only obtaining ethical approval (e.g. from one's university or funder) for the project, but also written permission beforehand from the interviewee and sometimes their managers and leaders that they agree to the process.

### Data Exemplar: interview data: students' views of academic writing

This exemplar uses transcripts based on one-to-one semi-structured interviews. They took place in the context of university teacher education programmes: all the interviewees were either HE lecturers involved in the delivery of teacher education or students undergoing programmes in this area.

The topic of academic writing continues to present problems to academics in general, but the researcher felt increasingly concerned that the expectations of lecturers and those of their students were at a odds. Research into this area would allow this divergence in expectations and experiences to be tested and analysed. Ultimately, the intention was to contribute to the literature on pedagogies of academic writing.

Following a pilot study, 30 individuals were formally interviewed. They were roughly balanced between teachers and learners and included many who were both teaching and undertaking academic programmes of their own (e.g. PhD). Interviews took place in quiet spaces at pre-arranged times to suit the convenience of the interviewees.

The interviews all followed the same format (4 standard questions) and were recorded using an audio-data recorder. The interviews were transcribed verbatim by the researcher before work began on analysing the transcripts.

### Analysing transcript data: three types of reasoning

The point of research is to find out something new, a search which involves looking carefully and rigorously at the data. Qualitative researchers often feel, however, that the way we look at our data is key and that the way we think about it matters, because this will have a direct impact on what we find out. –This qualitative approach always implies an explicitly ethical perspective (Cohen et al, 2017). Understanding and meaning are also fundamental, but claims about what data “means” are never straightforward, since they often involve distinct types of reasoning. Three types of reasoning are often described in this kind of context: deductive, inductive and retroductive (see, for example, Peirce, 1998).

#### Deduction

Deductive reasoning works “top down”, because it starts by establishing a hypothesis. This hypothesis is then tested against the data. The result can mean that our knowledge progresses by trial and error, often in an attempt to identify “why” a phenomenon exists. In our example, having noticed that attempts to micro-manage the way students write were not very successful, I asked why this is the case. One hypothesis is that modern education systems follow Michel Foucault’s (1991 [1975]) claim that the techniques of education and those of punishment and therapy merge into a single networked of social control institutions. This might explain why students’ work failed to fit into the required norms of writing, and why the institution was so keen to ensure that it did so. Data could then be collected and analysed deductively, allowing me to confirm or refute the hypothesis.

For example, below is an extract from Bella, an experienced teacher and teacher educator. Her transcript seems to imply that, in her practice, academic writing is something that students have to simply do right and adapt to the rules of the game. The phrases which seem to clearly imply this have been underlined and could be selected to make this point:

it's the ability to summarise...to contextualise some of the academic work, and research and knowledge that has been gathered into some kind of concise form, the ability to transfer or to translate the reading into a writing form in order to summarise a particular subject or topic. Students would probably say that it's the stuff they have to write, it's the essay you have to write.

Here, we could read Bella's account to justify an existing theory that academic writing is an example of *performativity* informed by Foucault's original assertions. Performativity is the practice, common to many educational contexts, of ensuring that people demonstrate that they are adhering to certain rules, regulations and, particularly, behaviours. Writing is simply a thing that you have to do. It has little intrinsic merit beyond simply doing what's required, and therefore tends to be associated with micro-management and, perhaps, excessive institutional control.

However, this example also shows that deduction has its limitations. We have to be wary of finding exactly what we set out to find to the exclusion of other, new, possibilities. Similarly, a focus on *why* will tend to be problematic. Typically, it is easy to conflate correlation (the fact that two or more things seem to occur at the same time) with cause (that a thing happens because another thing made it happen). In complex social situations, this confusion exposes the naivety of the researcher. – But *why* questions can also be regressive. We may have established a correlation or cause between one thing and another, but have we identified what caused the cause? Seeking an ultimate cause in this way can simply lead us into a never-ending cycle of *why* which never answers the question at hand. Finally, my suggestion that Foucault's existing hypothesis works here is flawed. If Foucault's focus was on *change* in systems and not the systems themselves, then his attempt to explain a particular type of education fixed in time was never intended to work as a generative hypothesis in the first place. Trying to prove or disprove it forty years after it was expounded would, on these grounds, be highly questionable.

## Induction

Much qualitative research involves induction. Unlike deduction, this kind of reasoning works “bottom up” and aims to describe a phenomenon. It makes systematic observations and rigorously identifies themes upon which generalisations are based. These examples,

observations or descriptions are used as a basis on which we build a picture of practice. This can be something of a snapshot, or an abstraction, but always contains an element of interpretation. So, it does not need to be simply a description of what we see and can often perform a critical function by drawing out aspects of experience which go unseen because they have been silenced, side-lined or hidden by others. In my example, inductive reasoning had many advantages, as it allows me to collect data and draw a picture of practice which would be both recognisable and potentially challenging. It would allow me to take an ethical stance, highlighting issues in teaching and learning that seemed important to the participants rather than imposing pre-existing, or even poorly-digested, second-hand ideas about them.

If we look at a later section from Bella's account, we can see that the situation requires a different explanation. Again, key sections have been underlined to show that this section, added to the first, makes her account more complex:

...the obvious things is to acquire certain knowledge or secure evidence about a particular subject and it has to be in written form because the ability to rationalise your thinking, organise it properly, if you talk, your thoughts could be all over the place- whereas when you're writing, you're stuck with that page, it forces you and I think it's a really good exercise, it forces you to be more concise, to organise your thinking and actually to reflect over that particular body of knowledge and how it applies to that particular question that you have, or to that particular context, so it's really contextualising the body of knowledge into your work.

Here, we can see that while Bella feels that writing is still a style which must be mastered, the "performance" of this style is not straightforward. Rather than simply adopting a style, writing is a spur to organised thinking and must therefore involve integration into one's own work and context. There is a case here for induction: rather than applying a given theory, we need to look carefully at the data and draw from it what is really being said. Here, the data suggests not simply a theory of performativity, but rather a more complex set of underlying behaviours influenced by experience, culture and even misapprehension which challenges the idea that learning to write means adoption of a particular model of academic writing.

## Retrodution

Research into academic writing tackles a long-standing area of interest, and both inductive and deductive approaches can and have been be used effectively in analysing such

phenomena. Many interpretations already exist, therefore, about how and why writing develops in HE contexts. However, the fact that the debate continues suggests that existing answers to such a complex question are insufficient: Bella's views seem to make the question of writing more complex than initially thought, reflecting a contemporary situation and recent developments in teaching and learning in higher education.

Something new is arguably needed and can be developed using a *retroductive* analytical strategy. The term, which is often associated with American pragmatist philosopher C.S. Peirce (1839 -1914), incorporates the Latin *retro* ("going backward") and *ducere* (to lead). It means to deliberately and rigorously lead backwards in order to find new factors to a well-known problem. Often, this means redefining and reconceptualising the problem itself by assembling or discovering, based on an interpretation of collected data, combinations of features for which there is no appropriate explanation or rule.

Starting with an observed phenomenon (such as the unsuccessful teaching and learning of academic writing), a different type of explanation – which complements or even supplants existing ones – can be offered. Neither top-down nor bottom-up, it aims to re-analyse basic principles in an original way. It works back from data towards a new explanation, reformulating the problem in a way that made a well-known issue both strange and interesting again.

Bella's account again helped here:

...I could not write in French right now. Not to the level I'm writing in English. Academically I just couldn't, because I've lost that usual vocabulary, and sentences *et cetera*, but it's the fight against you know, trying to make something appear more, more, intelligent, and it's linked to that. If you use certain words, such as, you know, your argument would be more intelligent, which is not the case! (...) So the internal fight is this idea of "how do I appear more intelligent than I am" which is expressed through language and through a certain argument, and actually if there's anything that I've learnt it's the power of the word, the individual word that you can, you don't have to have all sorts of decorations around, if you have the right word, the right structure, then it's fine.

In this example of academic writing, it was clear from my literature review that the Marxian concept of *alienation* underpinned much of the work in this area. Students, it is often argued, feel alienated by the work they have to do to pass their course (see, for example, Harrison

and Grant, 2015; Badenhorst et al, 2015). Writing this way just “isn’t them” and, so, it is unsurprising that they would be unwilling or unable to adopt the “right” way of writing.

But my data, from Bella for example, did not seem to fully justify this explanation. Despite an apparent consensus that “clarity” matters, was there really a single “right” way of doing academic writing? Did the teachers who said they followed the same model actually teach the same thing? Did they use the same techniques? Did students all feel and respond the same? Are they subjected to types of writing that they simply reject, or is their relation with writing more complex? What should we make of the fact that writers – even novices – ~~pp~~produce text rather than simply reproduce it?

Bella’s account was similar to others collected in this project. More than a sense of alienation in the kinds of performativity being demanded by academic writing, it demanded a way of taking account of the significant differences which the data threw up. Writers did not seem simply alienated by some outside force, but also, like Bella, driven towards certain types of writing by internal differences of their own. This made their attempt to deal with the demands of academic writing more about what they could produce than the simple – and impossible – attempt to reproduce some model which, the data suggested, did not really exist. The whole issue of whether or not alienation was driving Bella’s writing practices needed to be rethought. The data could be used, retroductively, to do this.

## Stage 2:

Taking a cue from Bella’s reference to her linguistic background, the data was analysed from this point of view. In Bella’s case, writing took place literally in a foreign language, but as she made clear, “foreignness” is about much more than geography. Reading the data retroductively, it was striking how often interviewees used terms that described writing in the same terms that are often used to describe “foreignness”. Academic writing was described as done by “other people”, exclusively, as a way of reinforcing “borders” and “boundaries”. It seemed “elitist”, and its terms were a “foreign language” to be mastered and feared.

## Thinking retroductively about the data

However, there seemed little point in dwelling on such negative descriptions. If purely negative, little academic writing would get done, and many learners do enjoy learning through this admittedly complex and, at times, deeply challenging process. Many clearly do feel alienated, and few would deny that a deficit model is influential in this context. But the

data makes clear that feelings of deficit or lack are not entirely distinct from feelings of alienation. If these two are linked, they may in fact be secondary phenomena, suggesting the existence of a more substantive factor connecting them.

If we ask what links these two phenomena, we can retroductively suggest that another, higher order, factor is in play which helps explain the analytical limitations of both alienation and deficit. This alternative needed a name, and I chose “xenolexia” (“the foreignness of text”). If writing is a “foreign” practice, it is foreign in a productive way rather than simply being a case of learners lacking something. The challenges of difference in the ways it is conceptualised and taught, but also the differences inherent in learning to write and even be different through writing, seemed to demand such a term. Instead of assuming that the writer simply lacks the skills to be adopted, or that writing is produced by a simple rejection of a foreign “other”, xenolexia describes how both text and writer develop different relations and identities without recourse to an abstract origin such as lack.

## **Summary [H2]**

Retroduction is one of several useful analytical tools because it exists to produce different analyses of well-known phenomena. Research projects all require a focus on something new, and induction and deduction both risk taking fresh new data and simply pigeonholing it as an example of something we already know. It is hard to see how the qualitative researcher, keen on difference, specificity and the important of local, individual experience would accept this reduction.

But retroduction is also open to criticism. It must serve a purpose, and if it produces implausible, unnecessarily complex or untestable conclusions, readers may well ask what aim it serves. But while if retroduction is the “least secure” of the three kinds of reasoning, it is also “the most fertile” in terms of its ability to offer new understanding (Pietarinen and Bellucci, 2014: 354).

## **Reflective Questions (3-4 questions) [H1]**

1. Of the three types of reasoning described, which are most common in your experience?
2. What are the advantages and disadvantages of each?
3. Why do you think retroductive reasoning seemed most appropriate in this particular study of academic writing?

4. Considering all the data available, what *surprising* ideas or themes can you see emerging?"

### Further Reading

Badenhorst, C.; C. Moloney; J. Rosales; J. Dyer; and Ru, L. (2015). Beyond deficit: graduate student research-writing pedagogies, *Teaching in Higher Education* 20 (1): 1-11

Beighton, C and Blackhall, A. (2017) *Pedagogies of Academic Writing in Teacher Education: from Epistemology to Practice and back again*, HEAd'17. 3rd International Conference on Higher Education Advances, University of València, Spain, June 2017

Beighton, C. (2016) *Expansive learning in Professional Contexts: A Materialist Perspective*, London: Palgrave Macmillan

Beighton, C. (2016) *Payback time? Discourses of lack, debt and the moral regulation of teacher education*, *Discourse: Studies in the Cultural Politics of Education*, 37:1, 30-42,

Blaikie, N. (2010) *Designing Social Research*, Cambridge: Polity.

Chaney, R.P. (1973/2009) "Comparative Analysis and Retroductive Reasoning or Conclusions in Search of a Premise" in *American Anthropologist* , pp. 1358–1375.

Cohen, L., Manion, L. and Morrison, K. (2017) *Research Methods in Education*, 8<sup>th</sup> ed., London: Routledge

Denzin, N and Lincoln, Y.S (eds) (2017) *The Sage handbook of Qualitative Research*, London: Sage.

Foucault, M. (1975) *Surveiller et Punir – Naissance de la Prison*, Paris: Gallimard/ (1991) Foucault, M. *Discipline and Punish : the Birth of the Prison*, London: Penguin.

Harrison, S. and C. Grant. (2015) *Exploring of new models of research pedagogy: time to let go of master-apprentice style supervision?* *Teaching in Higher Education* 20(5): 556-566,

Peirce, C. S. (1998). *The Essential Peirce: Selected Philosophical Writings*, 2 vols, 1893–1913, edited by the Peirce Edition Project. Indianapolis: Indiana University Press.

Pietarinen A-V. and Bellucci, F. (2014) New Light on Peirce's Conceptions of Retroduction, Deduction, and Scientific Reasoning, *International Studies in the Philosophy of Science*, 28:4, 353-373

## Data Exemplar [H1]

Data collected by: Christian Beighton

The data reproduced here is the transcript of an interview of a teacher educator investigating their views and experiences of the teaching and learning of academic writing. The transcriptions were made by the interviewer.

### Exemplar 1 [H2]

I would have thought that it's the ability to summarise...to contextualise some of the academic work, and research and knowledge that has been gathered into concise form, the ability to transfer or to translate the reading into a writing form in order to summarise a particular subject or topic. Students would probably say that it's the stuff they have to write, it's the essay you have to write. A lot of it is about organisation of thinking.

It is, for me, it's the translation of the body of knowledge that it out there into some kind sort of concise and, I suppose, contextualised form.... because if its linked to a question, you're not being asked to write about apples, you must have something that is much more precise, in what way do apples compare to pears.

### Why?

Overall in higher education you do it as a rite of passage perhaps, the obvious things is to acquire certain knowledge or secure evidence about a particular subject and it has to be in written form because the ability to rationalise your thinking, organise it properly, if you talk, your thoughts could be all over the place whereas when you're writing, you're stuck with that page, it forces you and I think it's a really good exercise, it forces you to be more concise, to organise your thinking and actually to reflect over that particular body of knowledge and how it applies to that particular question that you have, or to that particular context, so it's really contextualising the body of knowledge into your work.

Because that's what we do! HEIs, Higher education is meant to be the safekeeper of knowledge by definition, and there's a matter of reproducing you would have then to then show evidence that you know that body of knowledge, so it's a way perhaps, a legitimisation of your own existence in the university as a student.

For education, again, it's the again the academic writing perhaps we can go back to the, the link with how you apply the theory into your own teaching and blah blah blah. But there's also the fact that, this idea of when teacher education has become part of the university, the

devil's bargain, Goodson's devil's bargain means that you have to give something in exchange, and the exchange is academia. And I suppose we have forgotten that teacher training, teacher education could be seen as a skill, it could be done by apprenticeship, but the very fact that it is within universities means that you have partly to repay, it's not a debt but there's a kind of exchange where you would have to impose certain structures from academia, universities, into teacher education and you say "if you want this course to be part of HE, then you have to play the game, you have to have as well the norms, and the exercises and the activities, and one of these is academic writing. Because it doesn't fall neatly in to teacher education, teacher training.

### How?

It depends at what level...the difficulty in teacher education is that, and it's also an advantage, people usually have a degree, but they don't always have a degree in a literacy-linked subject, we do have expectations that they have some, they have things through that training of writing, so you think that they understand how to organise their thinking, etc, and some of them do, but for education, I number one I give them a formula, and I always say I'm not after Oscar Wilde, I'm not after beautiful writing, I'm after clarity and I always say you've got to explain the what, the how, the why, the why not, the improvements and the limitations and, yeah, so it's a kind of very easy recipe to writing about teaching.

Now if they are given something a bit wider, I have in the past for, at level seven you would expect them to have some, some...I may give them different essays to look at, to do some comparisons about what's good, strengths and weaknesses, about the organisation of the essay, or how the knowledge is presented, how quotes are being used, was it an effective way of approaching it or not, of referencing or not, so you can do that type of exercise,. I've asked my open University students exercises where they shuffle, you give them a deconstructed essays, and you ask them to reorganise it and to look at the logic, to identify the threads etc. so there's some technical stuff that you can do, but I suppose it's always letting them have a go, have a look at your style I think a lot of what I do ...is the feedback that I give...sometimes you comment on content, but sometimes on style, asking, you know, using a classification system or a colour system, so I would hope that, at that level, that it's more individual than an overall, this is how you've got to write because, I just don't think there's one way of writing, in this case and erm, people have to find, as teachers say, their own voice.

## Extra Data for Use With Reflective Questions [H2]

### Beatrice

[Academic writing is] what students have to do, something you have to do... (long hesitation) to communicate their ideas, to let us know that they're (long pause) that they understand what they've been taught, that they understand what they are talking about and that they can communicate it to us, really clearly, at the right level, with the right level of evaluation using the right kind of referencing, using the right kind of diction, using the right kind of style. And it's something that they are really constrained to do, it's a discipline, really, it's something that they have to... they either know it or have to get into it, they have to put it on like a coat really and realise that it's a very specific style that they're writing for, and it's something it's the way that they have to write.

Having said that, it's not what they sometimes think it is. It should be nice and clear, and straight forward, not complicated...it definitely shouldn't be them imitating some kind of Hogwarts-ish, professorial diction that they've seen or come across somewhere which is hugely convoluted doesn't say anything and is full of waffle and obfuscation. That's what it shouldn't be. It should be something that they are used to slipping in and out of, but it isn't what some students think it is, lots and lots of long words, you know that classical you've swallowed a dictionary stuff.... That's what I usually associate with maybe weaker students in fact, that's my experience.

I think it as just comes from a false idea of what life and writing at university is about, actually. I think it's a real misapprehension of what it's about to write at university. I think that there's this kind of step change that they perceive that they are about to undertake, that actually isn't really true and maybe it comes from, it's a pastiche really, a kind of pastiche of them looking in a thesaurus for synonyms and coming up with something outlandish and they think that's how it goes, maybe there's a kind of sense in which academic writing is full of long words, which is kind of slightly simplistic, a simplistic analysis in my point of view, but nevertheless, there's kind of enough truth in it for me to think across the years that actually that might be the apprehension for some of the students.

### Sub-heading [H3]

## METADATA

Metadata Field	Description/explanation	To be completed by Contributor
Author /Contributor biographies	Brief (<150 words) academic biography of EACH author	Christian Beighton has been teaching since 1991, and has experience of a wide variety of HE, FE and private settings in the UK and abroad. He has several teaching qualifications, a degree from the University of Dijon and extensive experience in teacher education. His doctorate discussed the role of creativity in lifelong learning and his current research interests include creativity, policy and practice in professional and lifelong learning settings. He publishes widely, presents internationally, and peer reviews for several journals. He is an Honorary Firearms Instructor with Kent Police and recent presentations include the keynote address at CCCU's Annual Teaching and Learning Conference, February 2018.
Discipline(s)	i.e. Those disciplines covered by dataset and guides. A dataset may have multiple subject areas.	Education  Choose an item.  Choose an item.  Choose an item.  Choose an item.
Data type	Please choose 'Other' if	Interview Transcripts

	your data type is not listed, and add the new data type underneath	
Prerequisites	Quant only	

### About This Dataset info

Meta Data Field	Description/explanation	To be completed by Contributor
Data Source Citation		
Full title of originating dataset		
Data author(s) and affiliations		
Dataset source website address		
First publication date	N/A	
Data Universe		
Funding sources/suppliers	Names of funding bodies, including grant numbers and related acknowledgements	
Sample/sampling procedures	If readily available	
Weighting	If appropriate and	

	available	
Data collection dates	September 2016- september 2018	
Time frame of analysis	June 2017- September 2018	
Unit of analysis	Academic writing	
Location covered by data	Canterbury Christ Church University	
Other sources	If dataset is drawn from other secondary sources	
Links to SRM content	N/A	
List of variables	Where available, practical and accessible	
Abbreviations, conventions or notation devices	N/A	