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# Generalising from Qualitative Research (GQR): A New Old Approach

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## Generalising from Qualitative Research (GQR): A New Old Approach

### **Abstract**

In this paper, the authors debunk a long-held myth that generalisation is primarily the domain of quantitative research. Based on a review of modern and historical approaches to generalisation, they argue that generalisation from qualitative research (GQR) can be achieved, not through a process of self-justification, but through defensible and rigorous research design and methods. The authors go on to consider examples from their own qualitative research work spanning the last 20 years. From these examples they offer mechanisms that qualitative researchers can employ to generalise from their findings. They suggest that generalisation is achieved through a process of generalisation cycles (GCs) which produce normative truth statements (NTSs), which in turn can be contested or confirmed with theory and empirical evidence.

### **Keywords**

Generalising from Qualitative Research, Generalisation, Qualitative Research, Normative Truth Statements, Evidence and Theory

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## Generalising from Qualitative Research (GQR): A New Old Approach

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*In this paper, the authors debunk a long-held myth that generalisation is primarily the domain of quantitative research. Based on a review of modern and historical approaches to generalisation, they argue that generalisation from qualitative research (GQR) can be achieved, not through a process of self-justification, but through defensible and rigorous research design and methods. The authors go on to consider examples from their own qualitative research work spanning the last 20 years. From these examples they offer mechanisms that qualitative researchers can employ to generalise from their findings. They suggest that generalisation is achieved through a process of generalisation cycles (GCs) which produce normative truth statements (NTSs), which in turn can be contested or confirmed with theory and empirical evidence. Keywords: Generalising from Qualitative Research, Generalisation, Qualitative Research, Normative Truth Statements, Evidence and Theory*

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In this paper, the authors intend to debunk a long-held myth that generalisation is primarily the domain of quantitative research. We argue that yes, one *can* generalise legitimately from qualitative research (Guenther & Falk, 2019). Not only is generalisation possible, it is at least as legitimate and useful as generalisation from quantitative research (GQR), given the conditions we here identify regarding the process and nature of generalisation. In a 2007 conference paper (Falk & Guenther, 2007) and a more recent chapter (Guenther & Falk, 2019), we consolidate our rejection of the “discourse of self-justification” that surrounded the qualitative research literature in “modern” times (approximately from the 1970s – see literature review later for precise context of modern). In the latter literature, as late as 1985, Lincoln and Guba (1985, p. 110) claimed that “The only generalization is: there is no generalization.”

It could be argued that the discourse of self-justification was a necessary step on the way in the “legitimation” process of qualitative research, but, as we counter-argue here, there were other ways derivable from the history and philosophy of science pre-dating “modern” qualitative research. From the “old” history, we revisit the move away from the consolidation of rejection of the post 1970s self-justification. Then we bring the old and the new together through an historical overview that sets the development of notions of generaliseability in an approximate 2,000+ year timeframe. These ways are still available to us now, as qualitative researchers, and thus we suggest an alternative means for researchers to structure and justify their work regarding generaliseability.

Bridges (2017, Chapter 12) provides us with the clue to link old and new approaches through his and others’ ideas of “truth claims” (see for example Ellis et al., 2014, p. 735; Margolis, 2004, p. 614) and propositions. We recast these claims as “Normative Truth Statements” (NTSs) and so we develop a spiral model of developmental generalisation which is relevant to qualitative OR quantitative research, both stemming as they do from the same

history of science. We conclude in general terms that creating new knowledge is an iterative process, where truth statements are contested and confirmed drawing on evidence and theory. While developing new knowledge based on the known literature is not a new concept, what is new is applying this to generalisation. However, our new understanding of generalisation should not be read as an excuse for poor methodology. To the contrary. Our spiral model should strengthen the conceptual base of qualitative methodology and promote a strong methodological basis from which to justify generalisability from research results, from the bounds articulated in the methodology itself. Nor do we expect generalisable truth to emerge from every piece of qualitative research. However, we do show that truths emerging about the particular are often just as valid and useful as those that lead to the general.

To help make the ensuing discussion more tangible, informing policy is one example of the application of GQR. Intentionally or unintentionally, informing policy has been a major outcome of qualitative research, though often challenged as having too small a sample, or not being statistically valid. Policy personnel use case study outcomes (for example) as evidence to justify, adjust or terminate strategies and initiatives. In the new old GQR, we provide a structured and reasoned method of designing qualitative research to maximise the generalisability, or of retrospectively analysing whether or how it might be possible and legitimate. In much policy-oriented research, design for generalisability will be crucial when normative claims or theories are required to explain why policies, practices and systems work the way they do (or not).

### **Our Positionality**

Our interest in GQR arises from more than 20 years of qualitative research work in a variety of contexts across Australia and Indonesia. Many of the issues we have researched (for example in education and training, biosecurity, domestic violence, justice, and child protection) have generated findings which could have been taken up powerfully to effect changes in government policies and their implementation. We have also been frustrated by the lack of useful quantitative research on these issues (sometimes on the basis of poor data quality, insufficient data, or an inability to untangle the complex causal logics from the multiple factors that produce outcomes). This is particularly true for program evaluations that we have conducted. Where quantitative research has failed to explain how and why observable changes occur, our work has often powerfully unpacked the theoretical and philosophical bases for changes we observe through research and evaluation. For many policy advisors this at times creates “light bulb” moments of understanding but fails to translate into changed policy because the findings are “just” qualitative. We believe that a new language and discourse associated with qualitative research will help shape changes that will see GQR more widely accepted.

### **Consolidating a New Era in GQR**

To summarise the basis for the new old approach to GQR, we draw on Guenther and Falk (2019). More than a decade on from our earlier work noted in the Introduction, we looked in the literature for anything new that might suggest we should update our initial assumptions, building on subsequent research. If it turned out that our new approach is justified, we felt it would more likely provide stronger support for generalisability applications for qualitative research, in areas of policy development and implementation, practice improvement and program evaluation. We did indeed find more, and so were tempted to conclude that the debate was over, and it was not worth pursuing this topic further. Moreover, literature such as Eisenhart (2009), Chenail (2010), Briesch, Swaminathan, Welsh, and Chafouleas (2014),

Tsang (2014), and Patton (2015) provided some different schemas for viewing the issue of generalising from qualitative research, lending it an additional air of respectability.

However, as we tried to make sense of the intervening literature, we found that most or all were based on an assumed “growth” or refinement of the ideas around generalisation from qualitative research (GQR) post-1970s. Importantly, there was nothing *new* in the sense that they were re-shuffling the deck chairs on the Titanic, as it were, assuming GQR was something that had only emerged from the relatively recent establishment of qualitative research as a “valid” field of Inquiry. This establishment itself formed part of a set of literature embedded in it what we called and still refer to a “discourse of self-justification.” In other words, the work from 2007 onwards was still justifying GQR against its quantitative cousin/s.

We recall that all qualitative methodological theses and research studies from around the 1970s onwards (including Master’s and PhD theses) included sections specifically referring to the incapacity to generalise from qualitative research compared with the predecessors of “valid” research typified in “hard sciences.” Lincoln and Guba’s (1985, p. 110) statement that “The only generalization is: there is no generalization” was perhaps the most quoted of the literature cited in such research. The Lincoln and Guba quote stands as a clear example of a direct acquiescence that this discourse of self-justification was an established entity. Any claims to the contrary would have to be, by definition, part of a discourse of self-justification. So GQR, in terms of the newly established acceptance of qualitative methods in general, would perforce be a claim that, while we have so far believed we cannot generalise from qualitative research, we can and in fact *do*. For us this was our 2007 stance. In light of the consolidation of that stance in the literature 2007 to the present, the authors could have been tempted to agree that the issue had been resolved. However, that very “acceptance” – or perhaps acquiescence – that GQR was only a recent phenomenon created a disjuncture in what was known and done by scientists and philosophers up to the so-called “modern” times. Hence our determination to take a fresh look at the bases of GQR.

Before progressing, we offer a simple definition of generalisability. According to Vogt (2005, p. 131), generalisability is “The extent to which you can come to conclusions about one thing (often, a \*population) based on information about another (often, a \*sample).” The simplicity of this definition disguises a contested understanding among research methodologies, which tend to split along binarised qualitative/quantitative lines. For example, Miller and Brewer (2003) define quantitative generalisation as “a process of first establishing the empirical reliability of facts and then using these facts to assess the validity of theory” (p. 127) and then under the heading of qualitative generalisation suggest: “Generalisation in qualitative research can be viewed as reversing this balance” (p. 127), suggesting that there is only one “generalisation” and that pesky qualitative research lot think they can upset that status quo. Which indeed they have done. From here, it is possible to open up a Pandora’s Box of caveats, conditions and contexts that frame and delimit the definitions. Dahler-Larson (2018, Kindle Location 30351) argues that “Issues of causality and generalization are important, but their meaning is not legislated by the philosophy of science. Instead, their meanings flow out of debate, argument, institutionalized rules, and power.”

### **Basis for a New Look**

Reviewing the argument of the paper so far and filling some of the gaps, the last five decades have seen emerging commentaries, if not debates, about how qualitative researchers might indeed generalise from their findings. As already observed, there was an overall “discourse of self-justification” which required the mandatory disclaimer as to generalisability, as noted above. One strand of commentary within the research pertaining to the discourse of self-justification was a growing observation that generalisation was happening whether it

“should” or not. Robert Stake (1980) recognised early that generalisation occurred and externalised the phenomenon by attributing generalisation to the actions of end-users or observers. It is they who do it, not us, the researchers, who warn against GQR.

In the overarching discourse of self-justification, ten years before Lincoln and Guba (1985), Cronbach (1975, p. 124) concluded that social phenomena were too context-specific to permit generalisability. He suggested the priority of qualitative research was to “appraise a practice or proposition... in context.” Denzin (1983, p. 133) also rejected generalisability as a goal. Others emphasised the context-specificity of qualitative research (Wainwright, 1997), which in their view limited generalisation to other similar situations (Creswell, 1998). Hammersley (1990, p. 108) argued that ethnographers are generally “not very effective in establishing the typicality of what they report. And in the absence of such information we must often suspend judgement about the generalisability of their claims.”

So these discourses of self-justification, emerging from the need for consolidation and justification of qualitative research, were paralleled by a commentary about the uses or functionality of qualitative research. That is, end-users, readers, commissioners of research and researchers themselves did to varying degrees generalise from qualitative research, as Stake noted. In other words, regardless of the debates, qualitative research has often been used either by researchers themselves or by end users to make generalised conclusions. The Stake position, however, begs the question as to *why* do end users feel they can generalise? What is it *about the research* that gives them the wish or confidence to do so?

There followed a set of literature which recognised the commentary on generalisability as a phenomenon, analysing and synthesising it. Patton (2015, p. 718), for example, summarises 12 approaches to qualitative generalisation depending on different inquiry perspectives. Eisenhart (2009) makes similar claims, identifying five main types of qualitative generalisation: theoretical, probabilistic, nomological, grounded and syntheses/meta-analysis. Lewis, Ritchie, Ormston, and Morrell (2013) argue for just three approaches: representational, inferential and theoretical generalisation. The first refers to inferences that can be made from the child to parent population samples; the second from the sample to another population; and the third where inferences can be taken from data towards theoretical propositions. Chenail (2010) offers a similar set of “generalizability strategies” based on theory and cross-case generalisation based on meta-studies. Tsang (2014), in an examination of generalisation from 25 case studies between 2008 and 2012, shows three types: theoretical, empirical and falsification. He concludes that “For cross-population generalization, there is simply no reason why case study results should be inherently less generalizable” compared with/to quantitative methods (p. 379). On a more practical level, Larsson (2009) identifies five ways that qualitative research can be employed for generalisation. The first two are used to falsify generalisation: (1) The ideographic study, where the intent is to focus on individual difference rather than common truths; (2) Studies that undermine established universal “truths”; where the focus is on creating doubt about predetermined truth. The next three can be useful when generalisation is called for: (3) Enhancing generalisation potential by maximising variation, where sampling is used to deliberately increase the probability of variance; (4) Generalisation through context similarity such that the weight of evidence allows generalised judgments to be made; and (5) Generalisation through recognition of patterns.

Wilder (2014) offers another approach, drawing on quantitative meta-analyses to conduct a qualitative meta-synthesis to determine the generalisable effects of parental engagement on student academic achievement. Meta-synthesis can also be applied to qualitative studies. Systematic reviews are yet another way that qualitative and quantitative studies can be assessed for generalising purposes. Of particular relevance to the purpose of this paper, Wilder notes that “...qualitative and quantitative research syntheses can effectively match existing research to the requirements of policy-makers and practitioners...” (p. 378).

Gough, Oliver, and Thomas (2017) point to heterogeneity in studies for systematic reviews. They argue that: “If an intervention is effective over many different applications in different contexts with different populations then it maybe provides a more generalisable and more robust test of effectiveness.” (p. 67). Petticrew and Roberts (2006) concur:

Reviewing the results of a number of studies of course itself provides a test of generalizability; if the results have been replicated in several settings with different populations, then this gives an indication of whether the results are transferable. (p. 149)

With all these well-justified approaches, does that mean that the debates are all but over? Well, maybe. But before closing that door we decided to implement a little evidence-based revisionism and see what would happen to current thinking if we set the more recent work on GQR in a longer and broader historical and disciplinary context, though we have tried to be selective about this length and breadth for manageability reasons. A more extensive explication can be found in Guenther and Falk (2019).

### **Stepping Back**

Given the context established above, one of “modern” post 1970s justification of qualitative research and its accompanying discourse of self-justification, we thought a look *before* the modern times might be instructive. In the published history of philosophy and science, debates about generalisability are not new. However, academic debates around the topic differ from practical manifestations of generalisability. Some ageless examples are self-evident (and rather trite). For example, if a child finds she gets burnt on a hot object, she will soon generalise her instance/s of experience to a workable theory about touching a hot object and learn to avoid doing so in the future from quite a limited number of instances. Trauma theory as a discipline is based on the assumption of the strong and long-lasting generalisability of a small number of impacting events: “Repeatedly experiencing similar types of events fosters a generalization of their memory representation” (Elbert, Schauer, & Neuner, 2015, p. 230). The individual’s capacity to generalise from even a single instance to all future activity is important to survival. To attempt and phrase such generalisability in quantitative terms ends up being non-sensical: “This experiment will require N people to apply their hands to a red-hot surface to determine what the probability is that they will burn their hands if they repeat the act in the future.”

So the practice of generalising is one important consideration. Theory is inextricably linked to practice in the sense that we quickly form a theory about future likelihood of the same outcomes from limited numbers. Theory further arises when we start meta-wondering via the established cognitive discourses of various disciplines about the process and conditions under which generalisability can be reasonably expected to occur when the instance is not so clear-cut as the hand and hot object example above. The disciplines of philosophy have a way of explaining generalisability, as do those of physics, statistics, geometry and others. To emphasise the point made above, the act of generalising has two components: the practice (hand on hot surface) and the theory derived from that practice (If I do that again, likely I’ll get hurt again and it’s not worth the risk). We will return to the role of theory and observation later.

As seen above, the making sense of particular instances of information by bundling them into more general ideas about their reliable application to potential but as-yet-unexperienced events, is as old as humankind. The earliest of written records such as those of the Greek philosophers “...stressed the role of general concepts in knowledge” (Woleński, 2004, p. 6). And this leads us onto the next section, which overviews the writings about

generalisation before the emergence of the push for recognition of “modern” qualitative research following Taylor, Bogdan, and DeVault, (2016):

...early qualitative researchers, some of whom conducted their research in an era when their preferred approach was in disfavor. ... We also have learned from the epistemological and theoretical challenges to traditional (p. xi) ethnography and qualitative methodology raised by researchers since the 1970s. (xii)

So “modern” is from the 1970s roughly, while the publication of Denzin and Lincoln’s (1994) *Handbook of Qualitative Research* marks a point in this modern history of qualitative research when this establishment occurred – in Taylor’s terms, when the era of “disfavoured” research methodology had largely passed.

But the elephant in the room remains: How is it that GQR emerged as an issue from this “modern” era of establishing qualitative research, and largely avoided pinning the issue into the earlier historical views of generalisation that were extant at the time the “hard sciences” were consolidating and changing their methodologies around generalisation? What are the implications of this historical sequence? And so to the next section.

### **Broad Historical Context**

Here we draw on the work of six key figures from history to point to the historical development of generalising processes. We step back more than two millennia to the work of Aristotle and move forward in time to the work of Carnap in the last century.

To understand the debates about generalisability from qualitative research requires an understanding of the history of the philosophy of science. For this purpose we could go back in time to Aristotle (384-322 BCE), who built his work on a “two-dimensional framework” (Psillos, 2012) of observable phenomena and a priori knowledge or principles, which should be mutually supportive.

Nearly two millennia later, Bacon (1561-1626) disputed Aristotle’s method arguing for the development of first principles from observation. Bacon, “in his view of science, found almost no place for mathematics” and claimed “that an essential part of interpreting nature by the new method of induction consists in devising a crucial experiment that judges between two competing hypotheses for the causes of an effect” (Psillos, 2006, p. 508).

Newton (1642–1727), a scientist of his time who is perhaps most famous for his articulation of the laws of gravity, created four rules of reasoning. These rules developed in the early 1700s applied to drawing conclusions in “natural philosophy.”

Rule I: We are to admit no more causes of natural things than such as are both true and sufficient to explain their appearances.

Rule II: Therefore to the same natural effects we must, as far as possible, assign the same causes.

Rule III: The qualities of bodies, which admit neither intensification nor remission of degrees, and which are found to belong to all bodies within the reach of our experiments, are to be esteemed the universal qualities of bodies whatsoever.

Rule IV: In experimental philosophy we are to look upon propositions inferred by general induction from phenomena as accurately or very nearly true, notwithstanding any contrary hypotheses that may be imagined, **till such time as other phenomena occur, by which they may either be made more accurate, or liable to exceptions.** (Gower, 1997, pp. 69-70)



The first two rules relate to deductive logic applied to assigning causes. In effect, he is saying we cannot assign a cause if there is no observable effect and vice versa. The third, which was constrained by objects with universal qualities is a kind of inductive logic, but with very limited scope. You can induce to the universal if you know that all objects you are measuring have the same properties. Gravity is a good example of this. The fourth is more open and argues for induction from the phenomenon to the hypothesis, as long as nothing observed contradicts the hypothesis. Moreover, Rule 4 lays the basis in principle for our later proposition about spiralling increasingly “true” Normative Truth Statements which build iteratively in cycles with new evidence and theory testing (See discussion of Bridges, 2017 later). The latter rules caused some division among natural philosophers who felt that deductive logic alone could be used to make generalisations.

Linnaeus’ (1707-1788) work provides another example of observation being used to create a normative botanical classification system. Prior to Linnaeus the botanical classification system as we know it today did not exist. He attempted to create order from observations in diversity. Of significance to our discussion is that he used empirical qualitative evidence to generalise: Müller-Wille and Charmantier (2012) conclude: “Not all of the generalisations that Linnaeus put forward... would be verified—in fact, almost all his attempts to identify domestic substitutes or acclimatize exotics were doomed to fail” (p. 14). Importantly, Linnaeus’ ability to generalise was not dependent on having all the data required to draw a universal conclusion.

Darwin (1809-1882) in 1833 embarked, as a natural scientist, on a global expedition of five years, spending a long time on the islands of Oceania and South America. He recorded his observations and reflection in his research journals, which he diffused in the book *On the Origin of the Species by Means of Natural Selection* (1859). Whether Darwin used deductive logic to generalise and so develop a theory of evolution—or whether it was more inductive—has been a point of contestation for some time (see for example Caplan, 1979). The reality is probably not an either (deductive) or (inductive) answer, but a creative combination of both that allows for generalisation from inductive and deductive processes.

One hundred years on from Darwin, natural philosopher Carnap (May 18, 1891 – September 14, 1970) proposed that, consistent with Newton’s Rule IV, the greater the number of confirmations for the premises of an argument the greater the probability generalisation could be applied inductively. Carnap believed that, “just as logical implication is the key concept for deductive logic, so degree of confirmation is the key concept for inductive logic” (Gower, 1997, p. 215). Similarly, probability associated with variability underpins the assumptions of Generalisability Theory which is used to assess the dependability of measurements associated with quantitative empirical studies (Briesch et al., 2014).

The point is, that even the best quantitative studies suffer from limitations, and that in both qualitative and quantitative studies there is no such thing as certainty in generalisability. Comparing generalisation from qualitative and quantitative research, Polit and Beck (2010) argue that the ideal of statistical generalisation in science is nothing more than a “myth” (p. 1452) as is the notion of “random sampling” (p. 2453). Bringing these historical and academic arguments together, we could feel some confidence in generalising from qualitative research, with similar caveats which might be applied to quantitative research methods.

### Why GQR Is Possible

The argument for the approaches and processes or mechanisms of qualitative generalisation are now well established. However, understanding why generalisability is possible is seldom unpacked beyond a mechanistic logic which in part is internally driven. For example, within a constructivist paradigm terms like credibility, transferability, dependability,

and confirmability replace the usual positivist criteria of internal and external validity, reliability, and objectivity” (Denzin & Lincoln, 2018, Location 995). What we can conclude from this redefinition of terms is that generalisability in positivist or post-positivist paradigms (associated with quantitative methods) is not the same thing as generalisability in constructivist or interpretivist paradigms (associated with qualitative methods). Further, the difference in terminology should not imply that one form of generalisation is better than another. Again, are we off the hook as it were? Is there further need to explore the topic?

A clue as to why there might be a need to unpack the concept of generalisability emerges in Patton’s follow-up to principles of generalisation mentioned above. He introduces the topic of “truth” (Patton, 2015, p. 727) deferring to Thomas Schwandt’s entry in the *Dictionary of Qualitative Inquiry* (Schwandt, 2007) where 10 definitions are briefly explained. Truth is the concern of philosophy, within the field of epistemology. Truth theories cut across the methodological paradigms and help explain why and on what basis normative statements or generalisations can be made (Bridges, 2017; Ellis et al., 2014; Lehrer, 1990; Margolis, 2004). The Fourth Rule of Newton confirms the manner in which they are refined, wherein “...we are to look upon propositions inferred by general induction from phenomena as accurately or very nearly true, notwithstanding any contrary hypotheses that may be imagined, till such time as other phenomena occur, by which they may either be made more accurate, or liable to exceptions” (Gower, 1997, pp. 69-70).

Knowledge (for our purposes of generalisation), according to Lehrer (1990) has three conditions: it must be true; it must be accepted (or believed); and it must be completely justified. In the context of knowledge for research, evidence enables justification, and consistent with the definition offered by Denzin and Lincoln above, the credibility of research makes it believable. But a question remains about what truth is. The answer to this helps us understand why and how we can apply qualitative or quantitative research to the task of normative generalisation.

Truth theories fall into five main categories: (1) Truth as Correspondence; (2) Truth as coherence; (3) Truth as what works; (4) Truth as consensus and (5) Truth as warranted beliefs (Bridges, 2017, pp. 185-212). There are variations of these five categorisations (see for example David, 2004). However, in simple terms, these theories suggest one of the following five positions:

- 1) A proposition is true only if it corresponds with an actual state of affairs or condition (Bridges, 2017, p. 191);
- 2) Propositional statements are true if they represent a coherent, consistent and comprehensive set of propositions (Bridges, 2017, p. 192);
- 3) A proposition is true if and only if it works allowing you to pursue your project/interest/purposes in practice (Bridges, 2017, p. 194);
- 4) A proposition is true if there is agreement universally or among relevant populations (Bridges, 2017, p. 195); and
- 5) Propositions are true if they satisfy the relevant tests of truth for propositions of their kind; they are rationally warranted, reasonable or defensible (Bridges, 2017, p. 197).

In his next chapter, Bridges goes on to draw connections between educational research paradigms and the theoretical positions listed above. For example, he links the pragmatist paradigm with “what works” theories of truth. While he does not make assertions about other truth theories it is not hard to see a link between correspondence and positivism/post positivism; or coherence and constructivist paradigms; or consensus and participatory paradigms. Beyond the epistemological position of these theories, if we take account of

ontologies and axiologies, the “paradigmatic controversies” (Lincoln, Lynham, & Guba, 2011) are little more than alignments to truth theories. Hence, we can generalise from qualitative research, not on the basis of methodology but on the basis of epistemological, ontological and axiological foundations of truth.

### Merging of Qualitative and Quantitative Research

It has always intrigued us that “hard science” contains a large amount of qualitative research. While scientists devise a hypothesis, then they often engage in something called “proof of concept” which is a minor study, often qualitative, conducted to establish the need or veracity of the hypothesis they started with. In other words, somehow or other qualitative methods are used to validate a quantitative concept but are not given legitimacy as “qualitative research”: they have been justified only in terms of proving a quantitative/scientific concept/hypothesis. So that makes it acceptable. It would be more accurate if the preliminary study was recognised as a qualitative study at the outset. A hypothesis, after all, is simply a statement of a tentative conjecture about the likelihood of something being true or not, once tested. Such “proof of concept” of an hypothesis or research question is needed because in itself it provides more substantive “proof” that the hypothesis is worth exploring. Qualitative and quantitative research merges whatever the research is called. In an attempt to justify “truth claims” of the social sciences Margolis (2004) ultimately concludes that there is “no principled disjunction between the natural and human sciences: the physical sciences are themselves reasonably characterized as abstractions made within an encompassing inquiry of ‘self-understanding’” (p. 616). However, the goal of all research is to find more of the truth of something. But what is “truth,” and how do we know when we “find” it? We have previously concluded that generalisation is a process rather than an outcome, shown below in Figure 1.

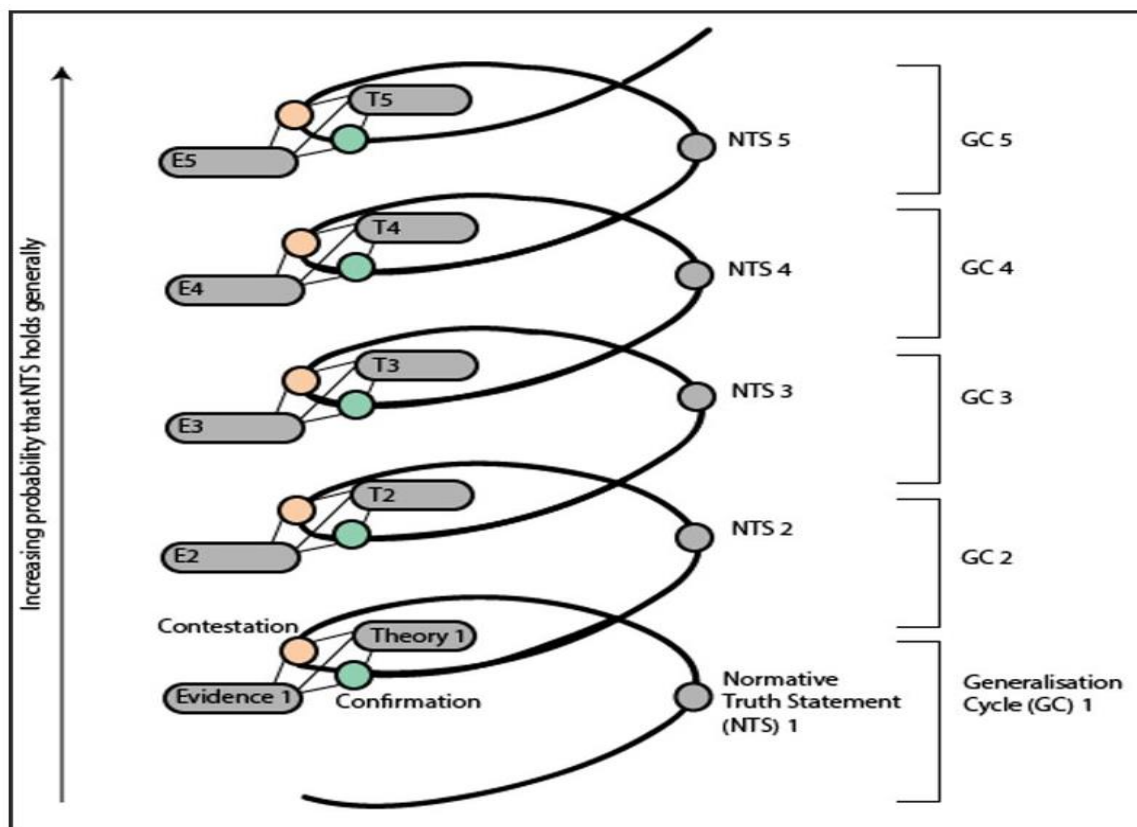


Figure 1. The cycle of generalisation from qualitative research (Source: Guenther & Falk, 2019).

The generalisation process, which we have diagrammatised in **Error! Reference source not found.**, is iterative allowing for both contestation and confirmation. The qualitative data collected as “empirical evidence” may support the development of new theory or additions to existing theories. Similarly, as theories emerge, they can be tested with new data. With each confirmation in the generalisation process, the probability that the knowledge gained, can be applied more generally, should increase. Where contestation occurs new processes of generalisation occur, which in turn lead to normative truth statements—at least for a time.

For the researcher, the starting point may not be at the bottom of the spiral. It is possible that new research builds on existing normative truth statements, existing theories and existing evidence.

### Examples of GQR

In Guenther and Falk (2019) two case studies were cited in detail and these formed the basis for the new look at GQR, building on three previous cases discussed in Falk and Guenther (2007). In this paper, we do not repeat those cases, but refer the interested reader to them for information on the steps in the argument towards a new old GQR. With those case studies as a back-drop, we now turn to a more comprehensive overview of historical examples from the authors’ work showing how GQR has occurred in a variety of research contexts. **Error! Reference source not found.** provides a selection of published research where generalisation has occurred from quantitative findings. The table starts with projects going back 20 years and leads to more recent work.

While it might not be immediately evident from the table, it is important to note that these research projects are not isolated or discrete pieces of work. Explicit links between projects are shown in the second column. It should be noted though that the links extend to other work by the authors not cited here and prior theoretical and empirical qualitative research work conducted by others. The methodologies employed use a variety of research and evaluation methods. Empirical evidence plays a role in each study, mostly in the form of qualitative interviews and/or focus groups. The second-last column shows that the generalisations emerging from the studies are mostly theoretical yielding principles and models with a mixture of practice, strategic and policy implications. The selection of normative truth statements given in the last column are expressions of the generalisability of the qualitative findings.

On the pages following, we attempt to diagrammatise the information from Table 1 in **Error! Reference source not found.** (below), showing four different contexts for the 13 research projects, and the progressive cycles of generalisation from one project to the next (arrowed lines). In addition, we show the cross-project informing links (dashed lines).

Table 1. Examples of GQR in various contexts.

| Project | Builds on | Citations  | Methodology employed | Context of generalisations                | Type of generalisation                | Normative truth statement examples                                |
|---------|-----------|--|----------------------|---|---------------------------------------|---|
| 1       |           | (Falk & Harrison, 1998, 2000; Falk & Kilpatrick, 2000) | 3 Case studies       | Community interactions and social capital | Theory of learning and social capital | Networks, trust and reciprocity underpin community-based learning |

| <b>Project</b> | <b>Builds on</b> | <b>Citations</b>   | <b>Methodology employed</b>  | <b>Context of generalisations</b>                                     | <b>Type of generalisation</b>  | <b>Normative truth statement examples</b>   |
|----------------|------------------|--|--|---|--|---|
| 2              | 1                | (Centre for Research and Learning in Regional Australia, 2001) | 10 Case studies, 700 interviews  | Delivery of vocational education and training in regional communities | Synthesis of findings, leading to principles of practice               | Social capital underpins the effective delivery of vocational education and training in regional communities                    |
| 3              |                  | (Northern Territory Council of Social Service, 2004)           | Mixed methods, reliant on 70 interviews  | Employment disadvantaged groups                                       | Theory as “practice principles” for strategic interventions            | Integrated and inclusive service and policy coordination underpin better employment outcomes                                    |
| 4              | 3                | (Falk, Guenther, Lambert, & Johnstone, 2006)                   | Formative action evaluation, 42 interviews, purposeful and representative sampling | Domestic violence policies and programs                               | Application of theory to policy development, drawing on empirical data | Interconnection of knowledge and identity affects network functionality and policy effectiveness                                |
| 5              |                  | (Young & Guenther, 2008; Young, Guenther, & Boyle, 2007)       | Mixed methods, informed by four case studies                                       | Vocational learning in remote communities                             | Theory for models of service delivery                                  | Access to effective training is constrained by regulated training systems which fail to consider local aspirations for learning |
| 6              | 3                | (Guenther, Falk, & Arnott, 2008)                               | 6 intervention cases, 84 respondents, mixed methods                                | Employment and training for welfare dependent groups                  | Theory development as implications for policy and its implementation   | Foundation employability skills which build confidence, motivation and identity support welfare to work transitions             |

| <b>Project</b> | <b>Builds on</b> | <b>Citations</b>                     | <b>Methodology employed</b>                                   | <b>Context of generalisations</b>  | <b>Type of generalisation</b>  | <b>Normative truth statement examples</b>  |
|----------------|------------------|--------------------------------------|---|--|--|--|
| 7              | 4                | (Arnott, Guenther, & Williams, 2009) | 10 evaluative case studies, 85 interviews                     | Domestic violence strategies   | Synthesis from qualitative data for development of criteria for sustainable development      | Effective domestic violence interventions are underpinned by local commitment.   |
| 8              | 2, 4             | (Balatti, Black, & Falk, 2009)       | 3 Action research case studies                                | Partnerships in literacy and numeracy programs                           | Theory for principles, application to policy effectiveness                                   | Stronger partnerships lead to increased social capital and improves policy outcomes  |
| 9              | 1, 2, 8          | (Falk & Surata, 2011)                | Macro-analytic theory building supplemented by 3 case studies | Social interactions for learning   | Theory for policy and strategy   | Social interactions are the mechanism of human behaviour change, whose effectiveness is dependent on the configuration of interactions for the particular purpose in different contexts                        |
| 10             | 1, 2, 8, 9       | (Falk & Surata, 2011)                | Multi-site, multi-issue, multi-methodologies                  | Strategies and policies for managing biosecurity nationally in Indonesia | Analysis and synthesis of findings, leading to principles of strategy and policy development | Clearly defined purposeful participatory linking interactions produce strategies and policies that are effective in tailoring “science” for local conditions, using local knowledge as the effective modifier. |

| <b>Project</b> | <b>Builds on</b> | <b>Citations</b>   | <b>Methodology employed</b>  | <b>Context of generalisations</b>                                | <b>Type of generalisation</b>   | <b>Normative truth statement examples</b>   |
|----------------|------------------|--|--|--|---|---|
| 11             | 5, 6             | (Guenther, Disbray, & Osborne, 2014; Guenther & McRae-Williams, 2014, 2016; McRae-Williams, 2014; McRae-Williams & Guenther, 2016) | Two major Grounded Theory qualitative projects on education and training, >100 interviews and focus groups, multiple case studies    | Remote education and training for Indigenous learners            | Theory building, principles for practice and policy, falsification  | Coercive policies and strategies fail to improve education and training outcomes. Successful education is redefined in terms of community aspirations and alignment to philosophical standpoints. |
| 12             | 1, 2, 8, 9, 10   | (Falk, 2017)   | Multi-site, multi-issue, multi-methodologies; Four empirical case studies with additional national (Indonesian) validation processes | Building a knowledge base to support a national biosecurity body | Analysis and synthesis of findings, leading to a sound knowledge base to support national biosecurity policy development and coordination | Analysis and synthesis of targeted empirical research studies supplemented by national validation processes provides a strong evidence base for national policy formulation and implementation    |
| 13             | 5, 9, 11         | (Guenther et al., 2017)  | 5 Case studies, 69 interviews  | Remote Indigenous adult learning                                 | Falsification and theory building as principles for policy and practice   | Human capital theory fails to explain training and employment uptake in remote communities. Local ownership enhances training and employability.  |

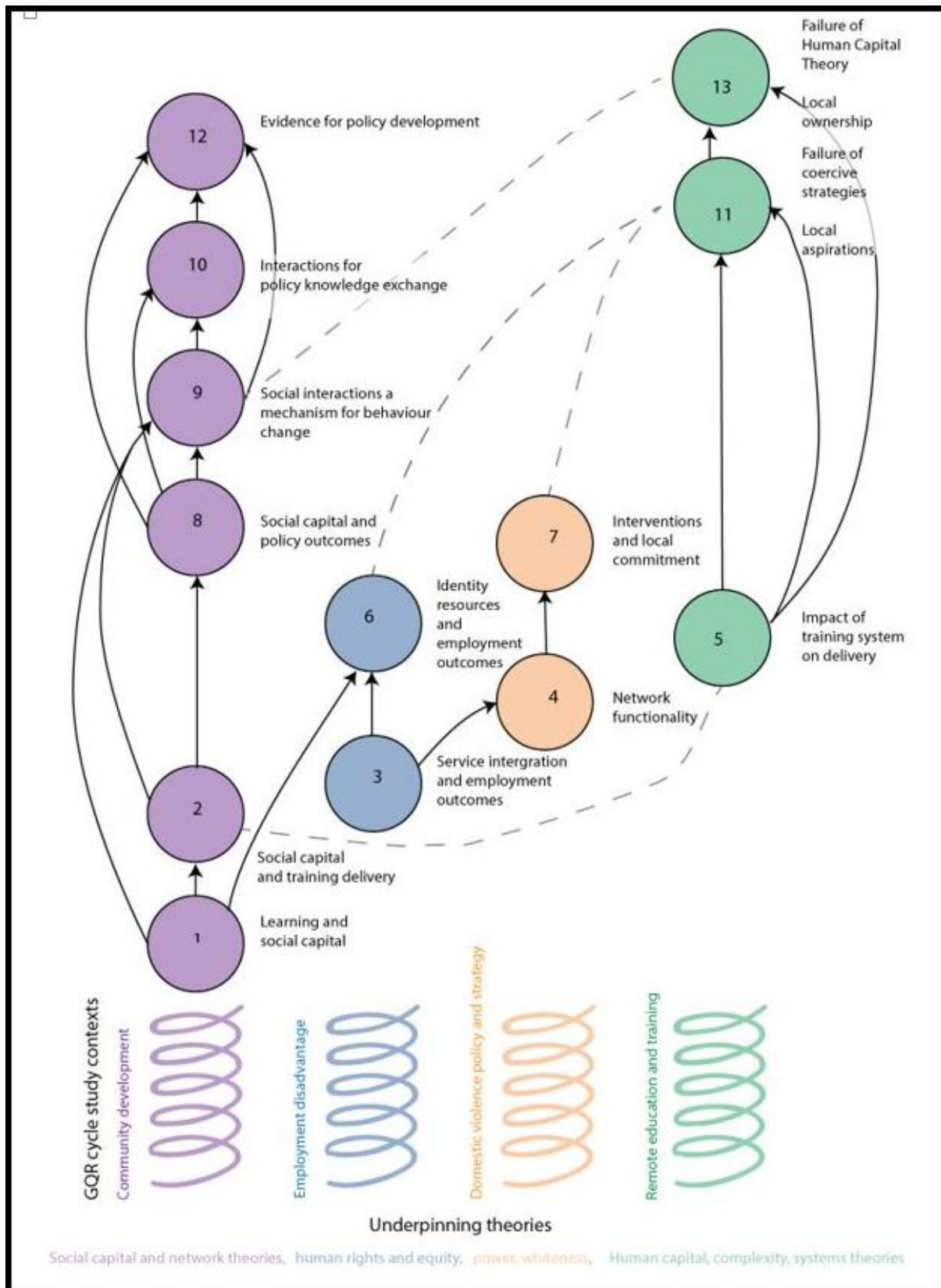


Figure 2. Cycles of GQR (based on Table 1 examples, highlighting key issues address in NTSs for each cycle).

A few features stand out from this presentation of our work over 20 years as depicted in Table 1 and the schematic representation in Figure 2 above. The diagram uses the numbers



1 to 13 shown in the table to represent the different projects. Firstly, despite the diversity of studies, grouped by four different qualitative research contexts or fields of study, there is considerable cross-field application from the NTS issues presented (represented by the dashed lines connecting projects from the different fields of study). Learnings from the community development Generalisation Cycles (GCs) contribute directly to the Employment disadvantage GCs (Projects 1 to 6) and indirectly to the Remote education and training GCs (Projects 9 to 11 and 13). Similarly, the learnings from the Domestic violence policy and strategy GCs inform the Remote education and training GCs (Projects 7 to 11). There are strong connections between social capital, identity resources and local aspirations (Projects 1, 6 and 11). We also see connections between social interactions, local commitment and local ownership (Projects 9 to 13). Likewise, there are important connections between service integration and network functionality (Projects 3 to 4).

Secondly, over the longer term—particularly noticeable in nearly 20 years of work in the community development GCs—there is iterative refinement and development of theory and its application (From Project 1 to 2, and 8, 9, 10 and 12). Note how the NTSs for this series of cycles shifts from the initial theory, to its application for training delivery, through to its application for policy outcomes, and for further policy development and policy knowledge exchange.

Thirdly, over the longer term—particularly noticeable in the more than 10 years of work in the Remote education and training GCs—there are examples of falsification, where empirical evidence challenges the assumption of theoretical assumptions (in this case Human Capital Theory, Project 11) and accepted policy imperatives (in this case coercive strategies, Project 13).

These all are manifestations of the process of contestation/conformation and theory/evidence building, shown earlier in **Error! Reference source not found.** It is also important to note that each GC is built on a pre-existing evidence base and a theoretical foundation - more or less according to Newton's Rule IV discussed earlier - as shown at the bottom the diagram. Another point to note is that the locus of the projects changes over time. For some studies, the research or evaluation is bound to an organisational context (for example, government and non-government organisations), a systemic context (for example training systems), a policy context (for example family and domestic violence) or a specific community context (for example rural communities). Geographically, the studies are attached to diverse locations—in all states and territories of Australia, and in selected parts of Indonesia. However, the generalisations we make from each of the cycles are not from sample to population, or from one region to another. Rather we apply our NTSs to systemic structures, networks, policies, principles, philosophies and theories. We now turn to the mechanisms for these generalisations from qualitative research.

### Mechanisms for GQR

The NTSs outlined in **Error! Reference source not found.** do not emerge from thin air. On reflection we use mechanisms that have a basis in the historical development of generalisation (for example Newton's Rule IV), on an understanding of methodology, and an understanding of epistemological truth. In this section we offer five mechanisms through which we have made GQRs.

#### Research design

Not all research designs are suited to GQR. Some are focused on the particular rather than the general. The difference lies in design. Qualitative research designed for generalisation

will probably have an existing theoretical basis. This was certainly the case for the early studies (1 and 2) listed in **Error! Reference source not found.** Large sample size is not a precondition for GQR—as we (and others) have shown it is possible to falsify a NTS with a single case—Project 13 demonstrated this in each of five cases, each with no more than 15 participants. That said, data obtained as evidence will necessarily be gathered for confirmability purposes; that is, those data can confirm pre-existing NTSs or refine them or place conditions on their application. The study in a GC will increase the probability that underpinning NTSs will hold true, except where the data are used to contest a NTS. Context in research design for GQR is important. NTSs arising from qualitative studies for generalisation may or may not be intended to be applied to alternative contexts. However, as we have seen from the examples listed in **Error! Reference source not found.** the contexts for NTSs may progressively diversify to different fields of study—consistent with Tsang (2014) cited earlier—different geographic locations and different groups of people. For example, the learnings from Projects 3 and 6 in the employment services context, were applied and refined in the remote training and education context (Projects 11 and 13).

### **Processes of deduction, abduction, and induction**

Analytic techniques are also important for GQR studies. Earlier we noted in the example of Darwin's theory of evolution that his analytical processes were both inductive and deductive—we described them as creative. Undoubtedly Darwin indulged in a great deal of retrospective validation; that is, using new information to confirm or deny a theory or conclusion already posited. Similarly, Newton and Linnaeus did not limit their analytic processes to deductive testing of hypotheses. Likewise, in many of our studies we used data inferentially and deductively. At times we used a combination of techniques, sometimes applying mixed methods approaches (Projects 2,3,5,7 and 11) for quantification, for triangulation or for synthesis—similar processes to those used in systematic reviews, and meta-synthesis as discussed in the literature (Gough et al., 2017; Petticrew & Roberts, 2006; Wilder, 2014). The point is, the NTSs that arise from this type analysis do not depend on a single analytic approach. We are not suggesting that there is less need for rigor, rather that rigorous methods can and maybe should apply different techniques depending on the data, context and research design.

### **Testing NTSs in other contexts**

The research questions in GCs are also important. For example, the question “How does pre-existing theory X work in context Y?” is a question designed to test the validity or transferability (generalisability) of a NTS. This process is evident in each of the GCs in the community development stream. Evaluative research can also be used as GQR studies. While evaluations are often used more for the particular (program/policy/intervention), the evaluation question that formatively asks “How can successes or failures of programs A/B/C inform our understanding of policy D?” is a legitimate GQR question, which we have used well in the domestic violence policy and strategy examples (Projects 4 and 7) shown in **Error! Reference source not found.** and also represented in **Error! Reference source not found.**

### **Building a new old GC to answer previously unanswered questions**

A lot of qualitative research ends with more unanswered questions for future research. A new GC can add to the probability that NTSs established earlier are more likely to hold true, provided as noted above, the designed study is directed to that purpose. This was certainly the

case in the development of Project 13 from 11 and Project 6 from the findings of 3. In both cases the geographic spread of the study was extended from the Northern Territory In Australia to several Australian states, while retaining a focus on the study context in remote education and training and employment service provision respectively.

### **Testing for truth**

We take the position that NTSs are propositions built on defensible foundations. Noting Patton's (2015) analysis of truth in generalisation and Bridges' (2017) definitions of truth propositions in research, we too argue that generalisation from research can result in normative statements on the same bases. NTSs are justified through consensus, correspondence, warrantability or coherence, depending on the nature of the evidence, the analytic process and the epistemological, ontological and cosmological positions taken. We argue further that the philosophical foundations of one NTS may be developed using different philosophical bases to create the next. This is indeed what happens with the combination of quantitative and qualitative methods where the ontological and epistemological positions differ, founded on paradigmatic assumptions often described in terms of post/positivism and constructivism. This was the case in Projects 3 and 5, where interview data was triangulated with quantitative data from secondary sources to generalise to NTSs. Perhaps more significantly it is evident also in the series of studies conducted in Indonesia (Projects 9, 10, 12) which drew on pre-existing cosmological assumptions of truth represented through religious symbols and structures and combined with more contemporary sociological understandings of truth represented through networks and social interactions.

### **Implications and Conclusions**

The foregoing discussion has several implications for generalisability in qualitative research. Having established that a) the definitions of generalisation, based on quantitative research paradigms, are inadequate; and b) that generalisation is a process in research, as much or more than it is a product of research; and c) that generalisation is an iterative process; we can be confident that qualitative research plays a significant role in the production of generalisable epistemological truth—what we have described as Normative Truth Statements.

Our first conclusion emerging from the historical and contemporary examples we have drawn on, is that generalisation from qualitative research is possible, and it is also a legitimate goal of a qualitative research endeavour. We no longer need to self-justify generalisation on the basis that “we can because we do.” Throughout history we see evidence of the process—a cycle of generalisation—of creating new knowledge iteratively, where truth statements are contested and confirmed drawing on evidence and theory. However, our understanding of generalisation is not an excuse for poor methodology. Nor should we be looking for generalisable truth to emerge from every piece of qualitative research. Truths emerging about the particular are often just as useful and used as those that lead to the general.

Our reconceptualisation of generalisation also has implications for the use of qualitative research for informing policy. Our experience suggests that many policy advisors are reluctant to use qualitative research largely because of the self-deprecating limitations that qualitative researchers impose on their own work. What we can now say with confidence is that well-designed qualitative research can be just as useful for generalisation as well-designed quantitative research. As we have shown with our research examples, the iterative nature of qualitative research lends itself well to theory development, and confirmation or rejection of normative truth statements—and the more this occurs, the greater the probability that those truth statements will hold generally, not just to the particular.

This leads us to another important conclusion about the design of qualitative research for generalisation purposes. Researchers must first be able to position themselves within a frame of existing statements of normative truth. Then from a theoretical and data gathering perspective, they must ask research questions that will respond to the existing knowledge base in ways that will clarify, challenge or confirm truth. In some cases, the new knowledge created may lead to a rejection of pre-existing assumptions of truth (as was the case with two of the GCs we cited from the field of remote education and training) and in others it may build upon and add to the existing truth statements (particularly in the series of community development GCs). Regardless, having positioned themselves in this way, researchers will be able to confidently make new statements of normative truth, and more so with each iteration of the generalisation cycle.

Finally, and perhaps more importantly for practitioners and policy bureaucrats, the role that qualitative research plays in building normative truth about practice is fundamentally important. We argue that no amount of “counting” will make any difference to good professional practice in the contexts we have worked. Practitioners will inevitably be keen to learn how to work more effectively. This is perhaps why there is so much good qualitative research that draws on theory to give practical and generalised guidance to professionals and organisations.

Having established generalisable principles or theories, qualitative researchers cannot rest on their laurels either. Contexts change, policy changes, technologies develop, public perceptions change and culture changes. Researchers need to continually take account of the changing policy and adult learning practice environments in their research, thereby revising their truth claims and theories.

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