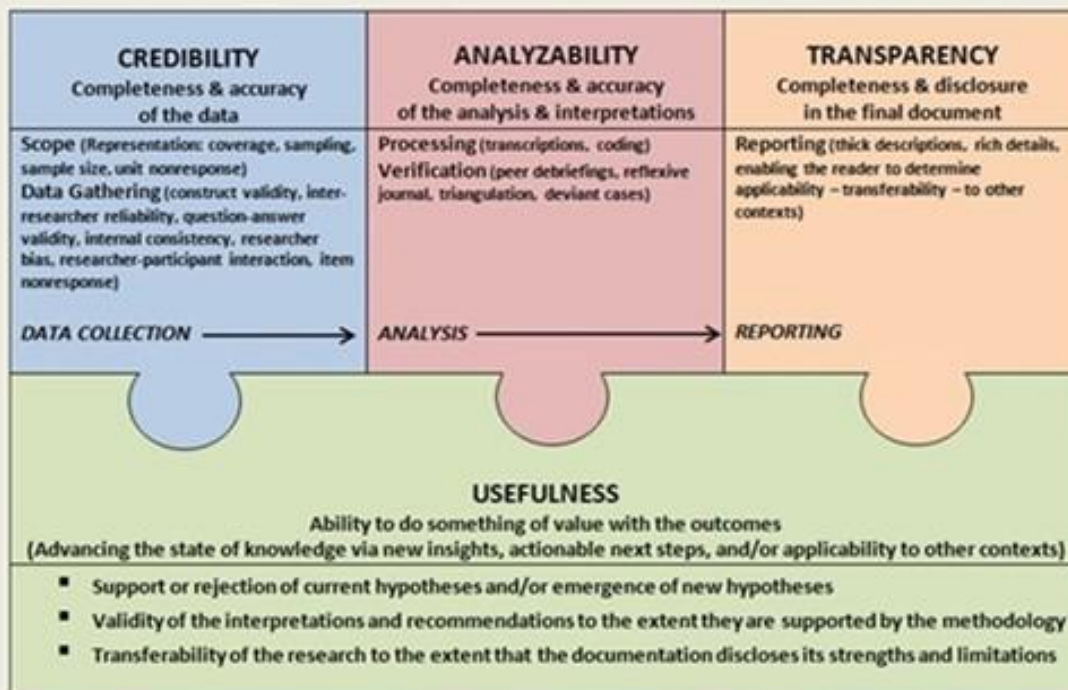


The Total Quality Framework for Qualitative Research



Source: *Applied Qualitative Research Design: A Total Quality Framework Approach* (Roller & Lavrakas, 2015, Guilford Press, NY)

The Total Quality Framework: Applying Critical Thinking Within the Unique World of Qualitative Research Methodology

16 articles related to the definition and
researchers' applications of the
Total Quality Framework

Margaret R. Roller

The contents of this compilation include a selection of 16 articles appearing in *Research Design Review* from 2017-2024 that discuss the Total Quality Framework, either with explicit attention to defining the TQF and specific approaches or how researchers have effectively utilized the TQF in their studies. These articles represent a small sampling of the articles in *RDR* devoted to the TQF, critical thinking, and a quality approach to qualitative research design and methods. Excerpts and links may be used, provided that the proper citation is given.

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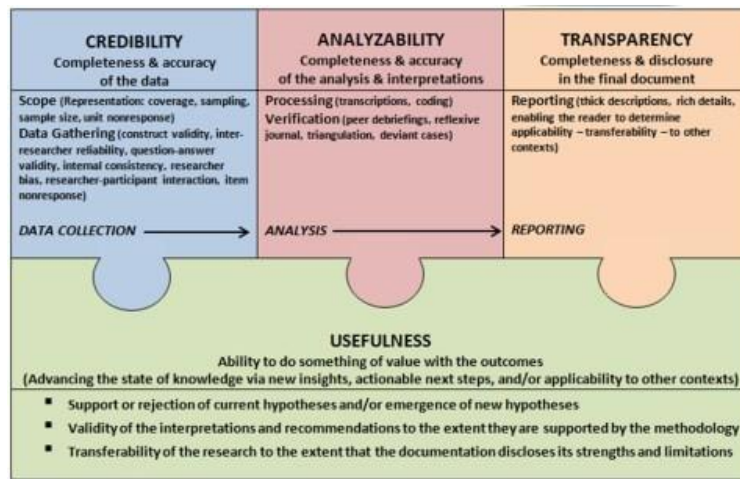
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Quality Frameworks in Qualitative Research

The following is a modified excerpt from [Applied Qualitative Research Design: A Total Quality Framework Approach](#) (Roller & Lavrakas, 2015, pp. 20-21)



Many researchers have advanced strategies, criteria, or frameworks for thinking about and promoting the importance of “the quality” of qualitative research at some stage in the research design. There are those who focus on quality as it relates to specific aspects—such as various validation and verification strategies or “checklists” (Barbour, 2001; Creswell, 2013; Brinkmann & Kvale, 2015; Maxwell, 2013; Morse et al.,

2002), validity related to researcher decision making (Koro-Ljungberg, 2010) and subjectivity (Bradbury-Jones, 2007), or the specific role of transparency in assessing the quality of outcomes (Miles, Huberman, & Saldaña, 2014). There are others who prescribe particular approaches in the research process—such as consensual qualitative research (Hill et al., 2005), the use of triangulation (Tobin & Begley, 2004), or an audit procedure (Akkerman, Admiraal, Brekelmans, & Oost, 2006). And there are still others who take a broader, more general view that emphasizes the importance of “paying attention to the qualitative rigor and model of trustworthiness from the moment of conceptualization of the research” (Thomas & Magilvy, 2011, p. 154; see also, Bergman & Coxon, 2005; Whittemore et al., 2001).

The strategies or ways of thinking about quality in qualitative research that are most relevant to the **Total Quality Framework** (TQF) are those that are (a) **paradigm neutral**, (b) flexible (i.e., do not adhere to a defined method), and (c) applicable to all phases of the research process. Among these, the work of Lincoln and Guba (e.g., 1981, 1985, 1986, and 1995) is the most noteworthy. Although they profess a paradigm orientation “of the constructionist camp, loosely defined” (Lincoln et al., 2011, p. 116), the quality criteria Lincoln and Guba set forth more than 35 years ago is particularly pertinent to the TQF in that it advances the concept of trustworthiness as a major criterion for judging whether a qualitative research study is “rigorous.” In their model, trustworthiness addresses the issue of “How can a [qualitative researcher] persuade [someone] that the findings of a [study] are worth paying attention to, worth taking account of?” (Lincoln & Guba, 1985, p. 290). That is, what are the criteria upon which such an assessment should be based? In this way, Lincoln and Guba espouse standards

that are flexible (i.e., can be adapted depending on the research context) as well as relevant throughout the research process.

These standards put forth the criteria of credibility, transferability, dependability, and confirmability. For Lincoln and Guba (1985), credibility is the extent to which the findings of a qualitative research study are internally valid (i.e., accurate). Credibility, or the lack thereof, is established through (a) prolonged engagement, (b) persistent observation, (c) triangulation, (d) peer debriefings, (e) negative case analysis, (f) referential adequacy, and (g) member checks. Transferability refers to the extent to which other researchers or users of the research can determine the applicability of the research design and/or the study findings to other research contexts (e.g., other participants, places, and times). Transferability, or the lack thereof, is primarily established through thick description that is “necessary to enable someone interested in making a transfer to reach a conclusion about whether transfer can be contemplated as a possibility” (Lincoln & Guba, 1985, p. 316). Thick description and transferability are key elements of the **TQF Transparency component**. Dependability is the degree to which an independent “auditor” can look at the qualitative research process and determine its “acceptability” and, in so doing, create an audit trail of the process. To that end, the Transparency component of the TQF deals directly with the idea of providing the user of the research with an audit trail pertaining to all aspects of the research in the final research document. Confirmability refers to utilizing the same dependability audit to examine the evidence in the data that purportedly supports the researcher’s findings, interpretations, and recommendations.

Like the Lincoln and Guba model, an important facet of the TQF is its focus on maintaining the integrity of qualitative research design. By acknowledging the **unique attributes of qualitative research** while also applying core research principles, quality frameworks such as the TQF hold qualitative researchers accountable and ultimately produce outcomes that are useful.

Akkerman, S., Admiraal, W., Brekelmans, M., & Oost, H. (2006). Auditing quality of research in social sciences. *Quality & Quantity*, 42(2), 257–274. <https://doi.org/10.1007/s11135-006-9044-4>

Barbour, R. S. (2001). Checklists for improving rigour in qualitative research: A case of the tail wagging the dog? *BMJ (British Medical Journal)*, 322(7294), 1115–1117.

Bergman, M. M., & Coxon, A. P. M. (2005). The quality in qualitative methods. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, 6(2, Art. 34).

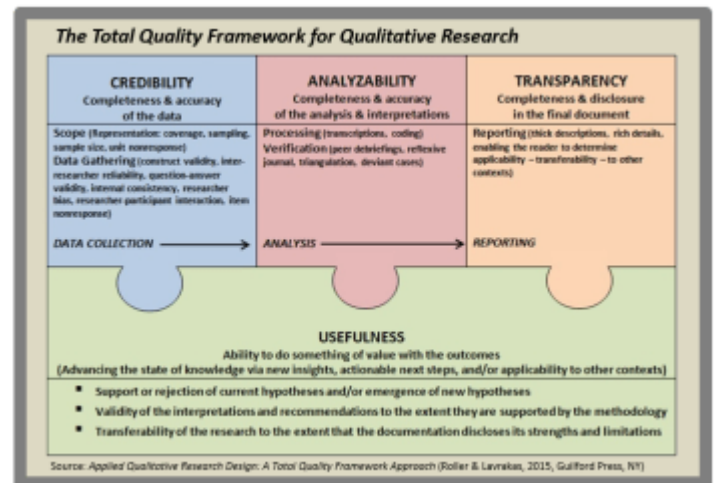
Bradbury-Jones, C. (2007). Enhancing rigour in qualitative health research: Exploring subjectivity through Peshkin’s I’s. *Journal of Advanced Nursing*, 59(3), 290–298. <https://doi.org/10.1111/j.1365-2648.2007.04306.x>

- Brinkmann, S., & Kvale, S. (2015). *Interviews: Learning the craft of qualitative research interviewing* (3rd ed.). Thousand Oaks, CA: Sage.
- Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Thousand Oaks, CA: Sage Publications.
- Guba, E. G. (1981). Criteria for assessing the trustworthiness of naturalistic inquiries. *Educational Communication and Technology Journal*, 29(2), 75–91.
- Hill, C. E., Knox, S., Thompson, B. J., Williams, E. N., Hess, S. a., & Ladany, N. (2005). Consensual qualitative research: An update. *Journal of Counseling Psychology*, 52(2), 196–205. <https://doi.org/10.1037/0022-0167.52.2.196>
- Koro-Ljungberg, M. (2010). Validity, responsibility, and aporia. *Qualitative Inquiry*, 16(8), 603–610. <https://doi.org/10.1177/1077800410374034>
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage Publications.
- Lincoln, Y. S., & Guba, E. G. (1986). But is it rigorous? Trustworthiness and authenticity in naturalistic evaluation. *New Directions for Program Evaluation*, 30(1), 73–84.
- Lincoln, Y. S. (1995). Emerging criteria for quality in qualitative and interpretive research. *Qualitative Inquiry*, 1(3), 275–289. <https://doi.org/10.1177/107780049500100301>
- Maxwell, J. A. (2013). *Qualitative research design: An interactive approach* (3rd ed.). Thousand Oaks, CA: Sage Publications.
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). Thousand Oaks, CA: Sage Publications.
- Morse, J. M., Barrett, M., Mayan, M., Olson, K., & Spiers, J. (2002). Verification strategies for establishing reliability and validity in qualitative research. *International Journal of Qualitative Methods*, 1(2), 13–22.
- Thomas, E., & Magilvy, J. K. (2011). Qualitative rigor or research validity in qualitative research. *Journal for Specialists in Pediatric Nursing*, 16(2), 151–155. <https://doi.org/10.1111/j.1744-6155.2011.00283.x>
- Tobin, G. A., & Begley, C. M. (2004). Methodological rigour within a qualitative framework. *Journal of Advanced Nursing*, 48(4), 388–396. <https://doi.org/10.1111/j.1365-2648.2004.03207.x>
- Whittemore, R., Chase, S. K., & Mandle, C. L. (2001). Validity in qualitative research. *Qualitative Health Research*, 11(4), 522–537. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/11521609>

Elevating Qualitative Design to Maximize Research Integrity

The following is a modified excerpt from [Applied Qualitative Research Design: A Total Quality Framework Approach](#) (Roller & Lavrakas, 2015, pp. 9-10).

All research that is aimed at understanding how people think and behave requires a principled approach to research design that is likely to maximize data quality and to instill users' confidence in the research outcomes. This is no less so in qualitative than it is in quantitative research; and, in fact, the **distinctive attributes and underlying complexities in qualitative research** necessitate a quality approach to qualitative research design. This approach requires qualitative researchers to build certain principles into their research studies by way of incorporating and practicing fundamental research standards.



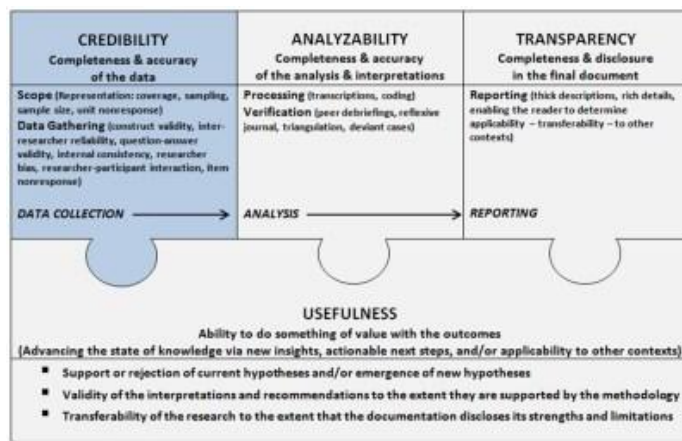
To that end, the **Total Quality Framework** (TQF) was devised to provide a basis by which researchers can develop critical thinking skills necessary to the execution of qualitative designs that maximize the integrity of the research outcomes. This framework is *not intended to prescribe a formula* or specific procedure by which qualitative researchers should conduct qualitative inquiry. Rather, the TQF provides researchers with a flexible way to focus on quality issues, examine the sources of variability and possible bias in their qualitative methods, and incorporate features into their designs that mitigate these effects and maximize quality outcomes. Integral to the TQF is the idea that all qualitative research must be **Credible**, **Analyzable**, **Transparent**, and **Useful**. These four components are fundamental to the TQF and its ability to help researchers identify the strengths and limitations of their qualitative methods while also guiding them in the qualitative research design process.

By holding the quality of qualitative research design to a deep level of scrutiny when applied across the diverse, multidisciplinary fields utilizing qualitative methods — e.g., education; psychology; anthropology; sociology; nursing, public health, and medicine; communication; information management; business; geography and environmental

science; and program evaluation — the discussion of qualitative research is significantly elevated and enables students, faculty, and practitioners to design and interpret qualitative research studies based on the quality standards that are the hallmark of the TQF.

Roller, M. R., & Lavrakas, P. J. (2015). *Applied qualitative research design: A total quality framework approach*. New York: Guilford Press.

Credible Qualitative Research: The Total Quality Framework Credibility Component



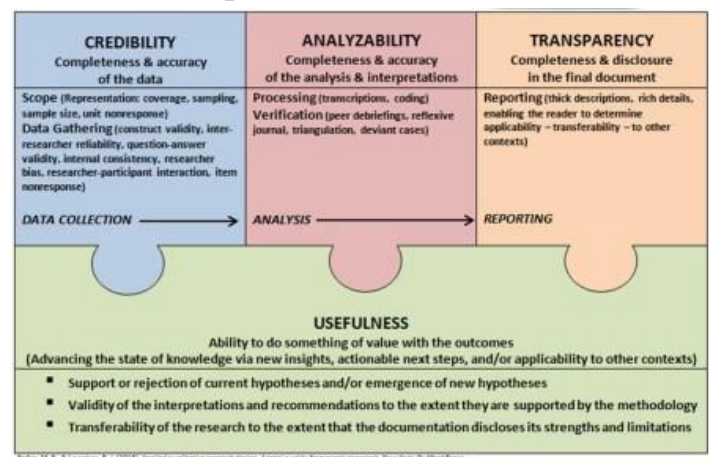
The **Total Quality Framework (TQF)** has been discussed in several articles appearing in *Research Design Review*. Some of these articles simply reference the TQF in the context of a broader discussion while others – such as **“A Quality Approach to the Qualitative Research Proposal”** and **“Evaluating Quality Standards in a Qualitative Research Literature Review”** – speak more directly about applications of the

TQF. The TQF is defined as “a comprehensive perspective for creating, managing, and interpreting quality research designs and evaluating the likelihood that a qualitative study will provide information that is valid and useful for the purposes for which the study is intended” (Roller & Lavrakas, 2015, pp. 21-22). In essence, the framework offers qualitative researchers a way to think about the quality of their research designs across qualitative methods as well as a particular paradigm or theoretical orientation. In this way, the TQF is grounded in the core belief that,

if it is agreed that qualitative research can, in fact, serve worthwhile purposes, then logically it would serve those purposes only to the degree that it is done well, regardless of the specific objectives that qualitative researchers strive to address. (p.20)

There are four components to the TQF – Credibility, Analyzability, Transparency, and Usefulness – each pertaining to a distinct aspect of the research process. The schematic (shown on the side) shows the interrelatedness of these components, with each of the first three components contributing to the fourth component, and ultimate goal of qualitative inquiry, i.e., Usefulness.

This article is a brief discussion of Credibility which is the TQF component having to do with data collection in qualitative research. Subsequent articles are devoted to the other three components – Analyzability, Transparency, and Usefulness.



From a TQF perspective, credible qualitative research is the result of effectively managing data collection, paying particular attention to the two specific areas of Scope and Data Gathering. **Scope** has to do with how well the participants from which data are gathered represent the broader population of people that is the focus of investigation. There are four considerations related to Scope. The qualitative researcher needs to think about*: (a) defining the target population; (b) how these individuals will be selected for inclusion in the study (i.e., the source itself – e.g., a list to sample from, a community center to draw from – and the procedures to be used to sample from the source); (c) how many participants the researcher ultimately wants to include in the study; and (d) strategies to maximize the researcher’s ability to gain access to and cooperation from the people of interest.

There are articles in *RDR* that discuss the various considerations related to Scope. For example, a *RDR* post back in 2012 titled **“Designing a Quality In-depth Interview Study: How Many Interviews Are Enough?”** talked about the many factors researchers should think about when determining the number of in-depth interviews to complete for an IDI study, both at the initial design phase as well as when in the field.

Data Gathering is the other critical ingredient to Credibility. Data Gathering has to do with how well the data collected in a qualitative study accurately represent the concepts the study set out to investigate. Data Gathering, you might say, is concerned with construct validity (where “construct” may refer to anything from a narrow topic to a broad and possibly ambiguous concept), addressing the question of How confident am I that my data truly answer my research objectives? There are four considerations the qualitative researcher will want to think about when designing and conducting Data Gathering: (a) identifying the appropriate constructs – *as well as* the specific attributes within each construct – to measure based on the research question or objectives; (b) choosing the appropriate qualitative method *as well as* the appropriate mode; (c) developing the data collection tool(s) to effectively operationalize and measure the constructs and their attributes, e.g., the interview or discussion guide; and (d) mitigating sources of bias and inconsistency associated with the data collector (researcher) *as well as* the participants.

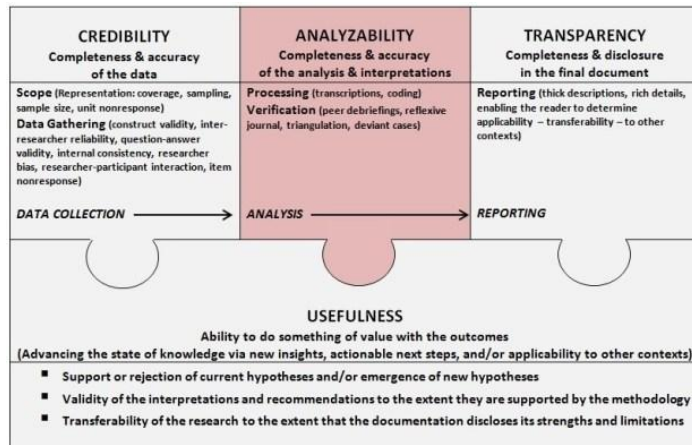
There are many examples in *RDR* of articles that discuss various considerations within Data Gathering. For example, the development of an interview guide is the topic of **“Interview Guide Development: A 4-Stage ‘Funnel’ Approach.”** And articles that address issues of researcher and/or participant bias and inconsistency include **“The Recipe for Quality Outcomes in Qualitative Research Includes a Healthy Dose of Consistency,”** **“Mitigating Researcher-as-instrument Effects,”** and **“Qualitative Data: Achieving Accuracy in the Absence of ‘Truth’.”**

Credible qualitative research is derived, not from a strict set of rules to follow but rather, from a keen sense of the research objectives and an understanding of how to think about the research principles that apply to data collection in relationship to the research question under investigation. By way of the TQF Credibility component, qualitative researchers are encouraged to think carefully about the composition (and inclusiveness) of their participants along with the unbiased and consistent manner in which data is gathered. It goes without saying that the flexible and contextual nature of qualitative research will attract any number of missteps – e.g., a skewed participant mix or researcher effects that bias the data – but the point here is that qualitative researchers need to be conscious of these factors, to reflect upon them and record these reflections, and to use this information in the interpretation and reporting of findings. This, of course, is where the other TQF components — Analyzability, Transparency, and Usefulness — play key roles.

*These considerations also pertain to qualitative content analysis where the focus is on objects and text rather than individuals.

Roller, M. R., & Lavrakas, P. J. (2015). *Applied qualitative research design: A total quality framework approach*. New York: Guilford Press.

Analyzable Qualitative Research: The Total Quality Framework Analyzability Component



Source: *Applied Qualitative Research Design: A Total Quality Framework Approach* (Roller & Lavrakas, 2015, Guilford Press, NY)

A [March 2017 article](#) in *Research Design Review* discussed the Credibility component of the Total Quality Framework (TQF). As stated in the March article, the TQF “offers qualitative researchers a way to think about the quality of their research designs across qualitative methods and irrespective of any particular paradigm or theoretical orientation” and revolves around the four phases of the qualitative

research process – data collection, analysis, reporting, and doing something of value with the outcomes (i.e., usefulness). The Credibility piece of the TQF has to do with data collection. The main elements of Credibility are Scope and Data Gathering – i.e., how well the study is inclusive of the population of interest (Scope) and how well the data collected accurately represent the constructs the study set out to investigate (Data Gathering).

The present article briefly describes the second TQF component – Analyzability. Analyzability is concerned with the “completeness and accuracy of the analysis and interpretations” of the qualitative data derived in data collection and consists of two key parts – Processing and Verification. Processing involves the careful consideration of: (a) how the preliminary data are transformed into the final dataset that is used in analysis and (b) the actual analysis of the final set of data. The transformation of preliminary data typically involves converting audio or video recordings into a written transcript. From a TQF perspective, the qualitative researcher needs to give serious thought to, among other things, the quality of the transcripts created, with particular attention to the knowledge and accuracy of the transcriptionist*. The qualitative researcher also needs to reflect on the [limitations of transcripts](#) and, specifically, what can and *cannot* be learned from the data in transcript form.

Once the final dataset has been developed, the qualitative researcher is ready to make sense of the data by way of analysis. The analysis process may vary among researchers depending on their particular approach or orientation. Broadly speaking, the analysis involves: (a) selecting the unit of analysis (e.g., an entire in-depth interview), (b) developing codes (designations that give meaning to some portion of the data in the

context of the interview and research question), (c) coding, (d) identifying categories (i.e., groups of codes that share an underlying construct), (e) identifying themes or patterns across categories, and (f) drawing interpretations and implications.

Verification is the other principal piece of the TQF Analyzability component. It is at the Verification stage – that is, when interpretations and implications are being conceptualized – that qualitative researchers give critical attention to the data by looking for alternative sources of evidence that support *or contradict* early interpretations of the study data. The verification step is an important one that contributes heavily to the overall quality of a qualitative research design. The various verification techniques include: (a) peer debriefing (the unbiased review of the research by an impartial peer), (b) a reflexive journal (the researcher’s diary of what went on in the study including reflections on their own values or beliefs that may have impacted data gathering or analysis), (c) triangulation (contrasting and comparing the data with other sources, such as data from different types of participants, different methods, or different interviewers or moderators), and (d) deviant cases (looking for “negative cases” or outliers that contradict the prevailing interpretation). There is another verification technique – member checking – that many researchers endorse but, from a TQF perspective, **potentially weakens the quality of a qualitative study.**

Verification is the topic of discussion in a 2014 article posted in *RDR* – **“Verification: Looking Beyond the Data in Qualitative Data Analysis.”** Readers of this blog will also be interested in the **Morse, et al. (2002) article** in *International Journal of Qualitative Methods* on verification strategies where the authors advocate utilizing verification “mechanisms” during the course of the qualitative research per se (i.e., not just at the analysis stage) to ensure the “reliability and validity and, thus, the rigor of a study.”

Not unlike credible qualitative research (the subject of the March 2017 *RDR* post), analyzable qualitative research is the product of knowing how to think about quality approaches to data processing and verification. It is not about concrete procedures to follow but rather the ability to conceptualize and integrate research practices that maximize the validity as well as the ultimate usefulness of a qualitative research study. The TQF Analyzability component is a vehicle by which qualitative researchers can think about where and how to apply quality principles in the processing and verification of their data. In doing so, researchers gain rich interpretations of the data leading to outcomes that address the research question and have value.

Value or usefulness, however, is not solely dependent on credible and analyzable

research. Before a qualitative study can be truly useful it must be effectively communicated. That is where **Transparency** – the third component of the TQF – comes in.

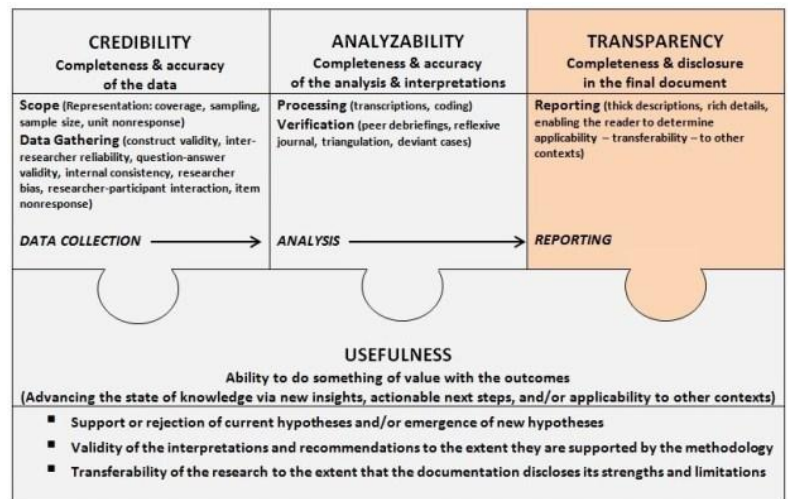
*Specific recommended qualities of a transcriptionist are delineated in Roller & Lavrakas (2015, p. 35).

Morse, J. M., Barrett, M., Mayan, M., Olson, K., & Spiers, J. (2002). Verification strategies for establishing reliability and validity in qualitative research. *International Journal of Qualitative Methods*, 1(2), 13–22.

Roller, M. R., & Lavrakas, P. J. (2015). *Applied qualitative research design: A total quality framework approach*. New York: Guilford Press.

Transparent Qualitative Research: The Total Quality Framework Transparency Component

The Total Quality Framework (TQF)* contributes to the conversation in the qualitative research community by providing researchers with a way to think about their qualitative designs – along with strategies or techniques – for the purpose of enhancing the quality of research outcomes. The TQF is a comprehensive approach that considers all stages of the research process – from data collection to the final “product.”



Source: *Applied Qualitative Research Design: A Total Quality Framework Approach* (Roller & Lavrakas, 2015, Guilford Press, NY)

Recent articles in *Research Design Review* discussed two of the four components of the TQF – specifically, [the Credibility component](#) and [the Analyzability component](#). The Credibility component pertains to data collection and consists of Scope (having to do with sampling and coverage) and Data Gathering (having to do with minimizing potential bias, nonresponse, and other factors that may weaken the validity of the data). The Analyzability component of the TQF is focused on the Processing of qualitative data (e.g., the quality by which the initial “raw” data is transformed) as well as Verification of research findings and interpretations (e.g., by way of deviant cases, peer debriefs, the [reflexive journal](#)).

The third component of the TQF has to do with the next phase in a qualitative research design – that is, reporting. When the data has been collected and thoroughly processed and verified, the qualitative researcher is left with the job of effectively communicating what went on in the research study and how the researcher drew interpretations from the analysis. Importantly, the job of reporting goes beyond conveying the research findings and the researcher’s interpretations and recommendations, but also provides details of the research design having to do with Scope and Data Gathering (i.e., Credibility) as well as Processing and Verification (i.e., Analyzability). As discussed in [this 2013 RDR article](#), the benefit of a detailed discussion of Credibility and Analyzability lies in its ability to fully inform the user of the quality strategies or techniques that were (or were not) incorporated into the design and, among other things, allow the user to evaluate the [transferability](#) of the research design, i.e., how well it might be used in a comparable context.

The elaboration of study details is referred to as “thick description” which is a term originally coined by British philosopher Gilbert Ryle and then adopted by Clifford Geertz to describe the work being done in ethnography (Ponterotto, 2006). In this respect, Geertz (2003) talks about the “multiplicity of complex conceptual structures” (p. 150) in ethnographic research, stating that “ethnography *is* thick description” (p. 156, emphasis added). Similarly, the “multiplicity” of design decisions that qualitative researchers make before, during, and at the completion of a qualitative study warrant a thick description in the final reporting document that explodes with rich details by which the user can essentially re-live the research process. In doing so, the user is able to evaluate their confidence in the research process as well as the researcher’s final interpretations and the applicability of the research to other contexts (i.e., transferability).

The TQF Transparency component has been discussed elsewhere in *RDR* – see **“Reporting Qualitative Research: A Model of Transparency”** – as has the concept of thick description – see **“25 Ingredients to “Thicken” Description & Enrich Transparency in Ethnography.”** The specific elements of a thick description will vary from method to method and study to study. There are, however, common aspects of a qualitative research design that should be reported, some of which are the

- Researcher’s assumptions regarding the necessary scope of the study.
- Decisions that were made related to sampling.
- Representativeness of the participants to the population and why that was or was not a concern.
- Level of cooperation and tactics that were used to maximize cooperation.
- Ethical considerations.
- Researcher/interviewer training.
- Interview/focus group guide development.
- Decisions that were made in the field, particularly decisions that changed the initial study design.
- Field notes and the researcher’s reflexive journal.
- Transcription process.
- Data processing protocol and verification procedures.

As with Credibility and Analyzability, the Transparency component of the TQF is not intended to prescribe procedures or steps to follow in the reporting process but rather offer researchers a way of thinking about how to incorporate a complete accounting of a research study for the benefit of the user (e.g., the researcher, the research sponsor, a colleague working on a similar topic). It is by way of this thick description that qualitative researchers demonstrate their commitment to transparency while providing an audit trail of the relevant materials. This transparent approach to reporting expands the

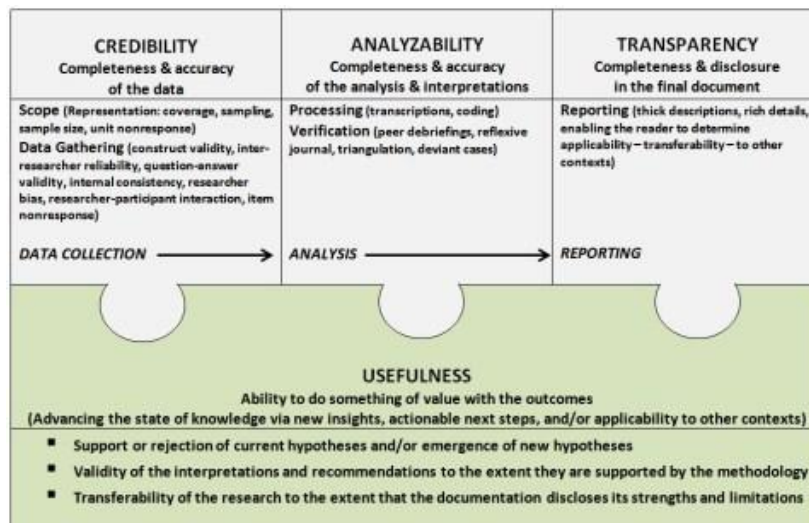
life of any given study and achieves the ultimate goal of allowing the user to do something of value with the outcomes. That brings us to the fourth and final TQF component, Usefulness.

* The Total Quality Framework is fully discussed in Roller, M. R., & Lavrakas, P. J. (2015). [Applied qualitative research design: A total quality framework approach](#). New York: Guilford Press.

Geertz, C. (2003). Thick description: Toward an interpretive theory of culture. In Y. S. Lincoln & N. K. Denzin (Eds.), *Turning points in qualitative research: Tying knots in a handkerchief* (Vol. 3, pp. 143–168). Walnut Creek, CA: AltaMira Press.

Ponterotto, J. G. (2006). Brief note on the origins, evolution, and meaning of the qualitative research concept “thick description.” *The Qualitative Report*, 11(3), 538–549. Retrieved from <http://www.nova.edu/ssss/QR/QR11-3/ponterotto.pdf>

Useful Qualitative Research: The Total Quality Framework Usefulness Component



Our research is of little value if the outcomes are not deemed useful in some way. This is true for all types of research. Whether it is qualitative, quantitative, or a mixed methods approach, the “carrot” that dangles ahead of the research team is the promise of reaching worthwhile, actionable conclusions and recommendations for the users and sponsors of the research.

Achieving this objective – reaching the “carrot” of useful research – is the product of the quality measures put into place at the data collection, analysis, and reporting phases of the research design.

The Total Quality Framework (TQF)* offers a way of thinking about these quality measures in a qualitative research design. The TQF is comprised of four inter-related components, each having to do with a stage of the research process. Recent articles in *Research Design Review* have discussed three of these components – **Credibility** pertaining to data collection, **Analyzability** having to do with the processing and verification of qualitative data, and **Transparency** relating to the reporting of details associated with data collection, analysis, and the drawing of interpretations.

The fourth component of the TQF is Usefulness or the “ability to do something of value with the outcomes.” The ultimate strength of the Usefulness component is a function of the rigor – the attention to quality – within the Credibility (data collection), Analyzability (analysis), and Transparency (reporting) components. In this way, the Usefulness component relies on each of the other components independently as well as collectively. The goal is to maximize the value of a qualitative research study for the researchers affiliated with the study, the research sponsors, and the users of the research such as researchers working in comparable fields or contexts as well as students investigating the research topic for the first time. The TQF Usefulness component was briefly discussed in

RDR back in 2012 – see [“Designing Qualitative Research to Produce Outcomes You Can Use.”](#)

Broadly speaking, the Usefulness component addresses the question, “What can and should be done with the study now that it has been completed?” Specifically, the usefulness of a qualitative study will be determined in varying degrees from study to study depending on the research question and the particular objectives. When evaluating usefulness, researchers may ask,

- Has the study confirmed or refuted important hypotheses?
- Has the study identified important knowledge gaps that future research should try to help close?
- Has the study offered recommendations for action that are worthy of further testing or worthy of actionable next steps?
- Has the study demonstrated the value of using new or refined methods for gathering qualitative data?
- Has the study demonstrated new or refined methods for analyzing qualitative data?

In keeping with the important role of *useful* qualitative research, it is recommended that a “Usefulness of the Study” section be included in the final research document. The intended purpose of this section is to explain the researcher’s views on how the study should be interpreted, acted upon, or applied in other research contexts. Regardless of whether the consumers of the research agree with the stated views, this section serves as an important reminder of the researcher’s responsibility to impart their knowledge and perspectives associated with the ultimate goal – useful qualitative research giving people the ability to do something of value with the outcomes.

* The Total Quality Framework is fully discussed in [Roller, M. R., & Lavrakas, P. J. \(2015\). *Applied qualitative research design: A total quality framework approach*. New York: Guilford Press.](#)

TQF Research Proposal: 11 Articles on the Total Quality Framework Qualitative Research Proposal

A Total Quality Framework (TQF) approach to the qualitative research proposal has been discussed many times in *Research Design Review* over the years. The current compilation includes 11 articles that appeared in *RDR* from 2013-2022. These articles range from a general discussion of quality considerations associated with the qualitative research proposal to specific attention to individual components of the proposal such as the literature review and research design.

“TQF Research Proposal: 11 Articles on the Total Quality Framework Qualitative Research Proposal” is available for download [here](#).



Margaret R. Roller

Six other *RDR* compilations — devoted to particular qualitative methods or facet of qualitative research — are also available:

“Ethnography & the Observation Method: 15 Articles on Design, Implementation, & Uses” is available for download [here](#).

“Reflexivity: 10 Articles on the Role of Reflection in Qualitative Research” is available for download [here](#).

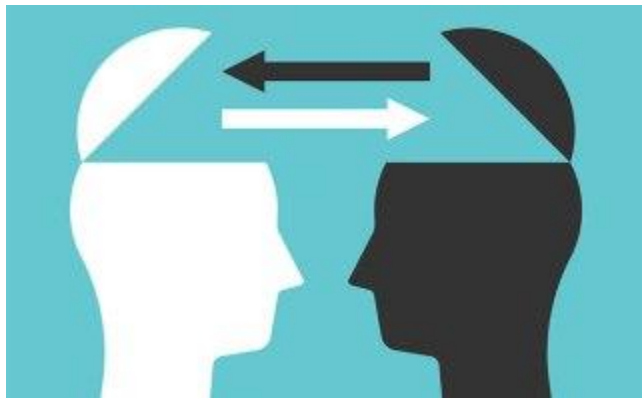
“The Focus Group Method: 18 Articles on Design & Moderating” is available for download [here](#).

“The In-depth Interview Method: 12 Articles on Design & Implementation” is available for download [here](#).

“Qualitative Data Analysis: 16 Articles on Process & Method” is available for download [here](#).

“Qualitative Research: Transparency & Reporting” is available for download [here](#).

Research Integrity & a Total Quality Framework Approach to Qualitative Data Sharing



The September 2021 issue of *Monitor on Psychology* from the American Psychological Association includes an article **“Leading the Charge to Address Research Misconduct”** by Stephanie Pappas. The article discusses the various circumstances or “pressures” that may lead researchers towards weak research practices that result in anything from “honest” mistakes or errors (e.g., due to insufficient training or

oversight) to deliberate “outright misconduct” (e.g., falsifying data, dropping outliers from the analysis and reporting). The article goes on to talk about what psychologists are doing to tackle the problem.

One of those psychologists is **James DuBois, DSc, PhD** at Washington University School of Medicine. Dr. DuBois and his colleague Alison Antes PhD direct the **P.I. (professionalism and integrity in research) Program** at Washington University. This program offers one-on-one coaching to researchers who are challenged by the demands of balancing scientific and compliance requirements, as well as researchers who have (or have staff who have) been investigated for noncompliance or misconduct. The P.I. Program also conducts an On the Road Workshop which is an onsite session for researchers “doing empirical research in funded research environments” covering such areas as decision-making strategies, effective communication, and professional growth goals.

Another approach to the problem of misconduct and the goal of research integrity is transparency by way of sharing data (and other elements of design), allowing other researchers the opportunity to examine research practices and substantiate the reported results. Dr. DuBois and his co-authors discuss this and other advantages to sharing *qualitative* data in their 2018 article “Is It Time to Share Qualitative Research Data?” The authors assert that allowing other researchers to assess supporting evidence and “comprehensiveness by examining our data may improve the quality of research by enabling correction and increasing attention to detail” (p. 384).

In response to DuBois et al., Roller and Lavrakas (2018) published a commentary expressing a resounding “yes,” it is time to share qualitative research data, stating further:

We believe that the greatest advantage to sharing qualitative data is the promise it holds of raising the bar on methodological rigor in the qualitative research community [and] its ability to bring quality issues to the forefront, leading to scholarly discussions and more explicit and critical self-evaluation, as well as new quality approaches to the design, implementation, and reporting of qualitative research. (p. 396)

Roller and Lavrakas (2018) go on in their commentary to discuss “a comprehensive and consistent way to think about *what* information to share about a qualitative study” through the lens of the **Total Quality Framework** (TQF). For instance, the types of information related to the **Credibility** (or data collection) component of the TQF that might be shared are: how the appropriate methods and modes for the research design were evaluated; how study participants were chosen, e.g., using a list; the strategies that were used to gain access to and cooperation from the research participants; copies of the data collection instruments, e.g., interview or discussion guide; the actual data gathered (to the extent that confidentiality and privacy of participants are fully protected); and the researchers’ **reflexive journals** (to the extent that confidentiality and privacy of participants are fully protected). With respect to the **Analyzability** (or analysis) TQF component, it is recommended that researchers share details of the data transcription process as well as explanations of how the unit of analyses were chosen and codes were derived, the coding process, the rationale by which categories, themes, and interpretations of the data were obtained, and a discussion of the verification process including how the results of this process were applied to the data analysis.

Archiving and sharing qualitative data is one approach towards raising methodological and ethical conduct in qualitative research, and it is suggested here that a consistent and comprehensive strategy to sharing will enhance this effort. As Roller and Lavrakas (2018) state

We fully support [the sharing of qualitative data] for the principal reason that it will hold qualitative researchers to a higher standard and raise the quality of qualitative methods, while also furthering researchers’ understanding of the lived experience related to myriad human conditions and issues...[And] by utilizing the TQF to bring consistency and comprehensiveness to data sharing, qualitative researchers will be rewarded with heightened attention to quality designs that serve to deepen the usefulness of their research outcomes. (p. 400)

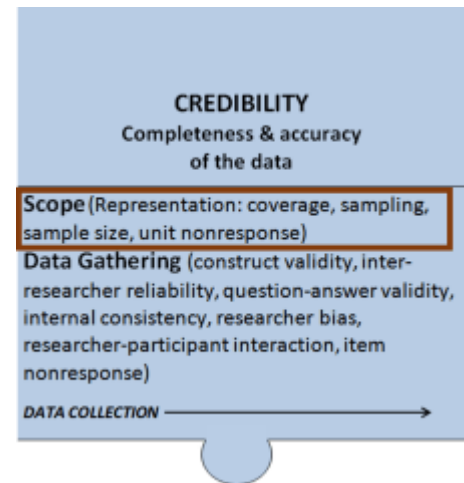
Dubois, J. M., Strait, M., & Walsh, H. (2018). Is it time to share qualitative research data? *Qualitative Psychology*, 5(3), 380–393. <http://dx.doi.org/10.1037/qup0000076>

Roller, M. R., & Lavrakas, P. J. (2018). A Total Quality Framework approach to sharing qualitative research data: Comment on DuBois et al. (2018). *Qualitative Psychology*, 5(3), 394–401. <https://doi.org/10.1037/qup0000081>

Image captured from: <https://ehrintelligence.com/news/10-patient-data-sharing-interoperability-principles-for-providers>

A TQF Approach to Choosing a Sample Design

The **Total Quality Framework** (TQF) offers qualitative researchers a way to think critically about their research designs and helps to guide their decision making. The TQF consists of four components, with each component devoted to the critical thinking considerations associated with a phase in the research process. The first component of the TQF is **Credibility** which is focused on data collection; specifically, Scope and Data Gathering. One of the many considerations related to Scope has to do with the sample design.



The following is a modified excerpt from ***Applied Qualitative Research Design: A Total Quality Framework Approach*** (Roller & Lavrakas, 2015, pp. 25-26) on the different aspects of sampling that researchers might want to think about as they develop their qualitative research designs.

Once the researcher has identified the list (or lists) that will be used to select the sample, a decision must be made about which sampling approach will be used. If the decision is to gather data from each member of the population on the list (e.g., all 20 students enrolled in an honors science class), then there is nothing more for the researcher to consider. But for those studies where something less than the entire population will be chosen for study, additional Total Quality Framework (TQF) decisions need to be made about sampling.

Here, qualitative researchers may needlessly lessen the quality of their studies by not giving these decisions sufficient consideration. In fact, some qualitative researchers may think that how they create a sample of the population is unimportant. Qualitative researchers may proceed in this manner because they mistakenly believe that systematic sampling is too hard to carry out (i.e., too complex, too expensive, and too time-consuming) and that it is “too quantitative” a concern. Yet, in the vast majority of qualitative studies, systematic sampling is neither complex, expensive, nor time-consuming, and should not only be a quantitative issue. And by using an organized approach for choosing which members of their key population to study, as opposed to merely using a convenient and disorderly approach to sampling, qualitative researchers avoid a major threat to the credibility of the data they gather. That threat is the possibility

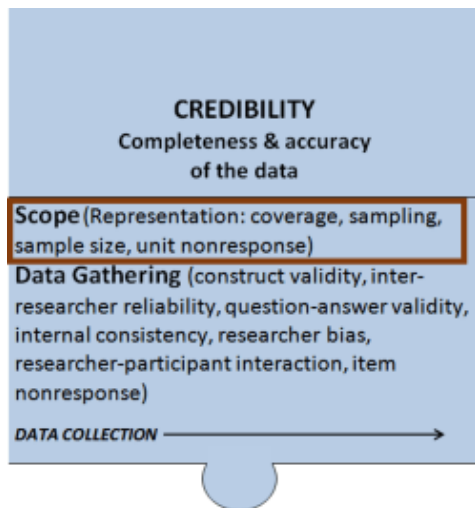
that those from whom they gather data are not, in fact, representative (do not share defining characteristics) of the population being studied.

Take, for example, a focus group researcher that has a list of men and women who completed a cardiopulmonary resuscitation (CPR) training class in the past year. The researcher can choose one of two basic approaches to selecting those who will be invited to participate in a group discussion. The often-used but misguided approach is to start at the top of the list and contact people, one after another, until the focus groups have been filled with ostensibly willing attendees. The rigorous and correct approach is to use an organized scheme to sample CPR class graduates from across the entire list (i.e., stratifying the list and taking an ‘nth’ name approach). The second approach is preferred because it avoids the possible problem that the names on the list are ordered in a way that is not representative of the entire population of CPR graduates that the researcher wants to study.

A final TQF issue related to choosing a sample applies to qualitative studies that utilize observations of naturally occurring human behavior to gather data, such as in ethnographic research. In these studies, sampling considerations need to be applied to the times and the locations during which the behaviors of interest will be observed. By systematically choosing which locations and which times to conduct the observations—among all possible locations and times in which the behaviors of interest will be taking place—the qualitative researcher is greatly raising the likelihood that the observations included in the study are a representative subset of all the possible behaviors of interest to the study.

Roller, M. R., & Lavrakas, P. J. (2015). *Applied qualitative research design: A total quality framework approach*. New York: Guilford Press.

A TQF Approach to Sample Size



Sample size and sampling in qualitative research design have been discussed elsewhere in *Research Design Review*, see [“Sample Size in Qualitative Research & the Risk of Relying on Saturation”](#) and [“Shared Constructs in Research Design: Part 1 — Sampling.”](#) In June 2022, [“A TQF Approach to Choosing a Sample Design”](#) was posted to *RDR* and considers ways to ensure that research participants are representative (share defining characteristics) of the population being studied.

The following is a modified excerpt from *Applied Qualitative Research Design: A Total Quality Framework Approach* (Roller & Lavrakas, 2015, pp. 26-27) that briefly examines a Total Quality Framework (TQF) approach to another facet of sample design, i.e., sample size.

How large a sample to use is a decision that qualitative researchers need to make explicitly and carefully in order to increase the likelihood that their studies will generate credible data by well representing their population of interest. Unlike quantitative researchers who most often rely on statistical formulae to determine the sample sizes for their studies, qualitative researchers must rely on (a) past experience and knowledge of the subject matter; and (b) ongoing monitoring during the data-gathering period, which includes applying a set of decision rules, such as those listed in [“Designing a Quality In-depth Interview Study: How Many Interviews Are Enough?”](#) These decision rules consider (a) the complexity of the phenomena being studied, (b) the heterogeneity or homogeneity of the population being studied, (c) the level of analysis and interpretation that will be carried out, and (d) the finite resources available to support the study. These types of decision guidelines, along with past experience, should provide qualitative researchers with the considerations they need to carefully judge the amount of data necessary to meet their research objectives. (Of note, if a researcher does not have sufficient past personal experience, a literature review, or speaking directly with other researchers who do have such experience, should serve well.)

As importantly, during the period when data are being gathered, researchers should also closely monitor the amount of variability in the data, compared to the variability that was

expected, for the key measures of the study. Based on this monitoring, researchers are responsible for making a “Goldilocks decision” about whether the sample size they originally decided was needed is too large, too small, or just about right. In making a decision to cut back on the amount of data to be gathered, because there is less variability in what is being measured than anticipated, the researcher needs to make certain that those cases that originally were sampled, but would be dropped, are not systematically different from the cases from which data will be gathered. In making a decision to increase the size of the sample, because there is more variability in what is being measured than anticipated, the researcher needs to make certain that the cases added to the sample are chosen in a way that is representative of the entire population (e.g., using the same orderly approach that was used to create the initial sample).

In all instances, and if the necessary resources (staff, time, budget) are available, it is prudent for a researcher to error on the side of having more rather than less data. Gathering too much data does no harm to the quality of the study’s findings and interpretations, but having too little data leaves the researcher in the untenable position of harming the quality of the study because the complexity of what was being studied will not be adequately represented in the available data. For example, case study research to investigate new public school policies related to the core science curriculum might include in-depth interviews with school principals and science teachers, observations of science classes in session, and a review of students’ test papers; however, as a complex subject matter, the research may be weakened by not including discussions with the students and their parents as well as by a failure to include all schools (or a representative sample of schools) in the research design.

Roller, M. R., & Lavrakas, P. J. (2015). *Applied qualitative research design: A total quality framework approach*. New York: Guilford Press.

A TQF Approach to Construct Validity

Construct validity plays an important role in the design, implementation, analysis, and ultimate usefulness of qualitative research methods. The construct of validity itself in qualitative research is discussed in [this article](#) and cites qualitative researchers across disciplines who explore “unique dimensions” and other considerations relating to validity in qualitative research.

The [Total Quality Framework](#) (TQF) relies heavily on construct validity in its quality approach to each phase of the qualitative research process. At each phase, the researcher must ask “Am I gaining real knowledge about the core concepts that are the focus of this research?” For example,



- An important step when **developing a research design** is to identify the key constructs associated with the research objectives to investigate, and the particular attributes of each construct that the researcher wants to explore. So, for example, a researcher conducting a study on dietary behavior may have interest in “health consciousness,” including shopping behavior related to organic and fresh foods.
- In the in-depth interview and focus group discussion methods, careful attention needs to be paid to [guide development](#) and the inclusion of questions relevant to the constructs of interest. When developing the guide, the researcher needs to ask, “Is this [topic, question, technique] relevant to the construct we are investigating?”, and “Does this [topic, question, technique] provide us with knowledge about the aspect of the construct that we intended to explore in the interviews/discussions?”
- In ethnography, the [observation guide and observation grid](#) are important tools. “The grid is similar to the guide in that it helps to remind the observer of the events and issues of most import; however, the observation grid is a spreadsheet or log of sorts that enables the observer to actually record and reflect on observable events in relationship to the research constructs of interest” (Roller & Lavrakas, 2015, p. 206).
- The quality of [qualitative data analysis](#) hinges on the researcher’s ability to effectively identify, analyze, and develop valid interpretations of the data around the important constructs associated with the research objectives. To assist the researcher, a TQF approach to analysis recommends a **codebook format and coding form** (which is basically a reflexive journal for the coder[s] to record

thoughts and justifications for their coding decisions) that highlights constructs of interest. For example,

Codebook					
Unit of Analysis and Key Constructs	Code Name	Code Description and Date of Latest Update	Relationship to Other Codes	When to Apply	Examples
Unit of analysis: Each diary	EDUOPPTY	Code description: Specifically mentions educational opportunities that are provided by the facility (e.g., access to online webinars, art classes, workshops).	This is a main code. Subcodes include: OLEDU (online education) ARTCL (art class) CPUCL (computer skills class) FINCL (personal finances class) EECL (exercise equipment class)	Code applies to any mention of any type of educational, career, or personal development opportunity provided by the facility.	"Weekly access to online webinars is helping me keep up with my career." "Twice a week there is an art class. Who would have thought I could draw!"
Main construct: Well-being Subordinate constructs: Physical well-being Mental well-being Financial well-being		Last updated on: December 5 at 10 A.M.	Other related codes: POSPHYWB (positive physical well-being) NEGPHYWB (negative physical well-being) POSMENWB (positive mental well-being) NEGMENWB (negative mental well-being) POSFINWB (positive financial well-being) NEGFINWB (negative financial well-being)		

Coding Form			
Relevant Construct/ Issue	Relevant Code	Nature of Relevant Content	Example/Additional Feedback
Physical well-being	EDUOPPTY	I am seeing a lot of examples where the classes on how to use the exercise equipment are perceived as educational as well as giving women a workout and making them feel physically stronger.	"The weekly classes in the gym on how to use and operate the equipment (like the elliptical machine) have shaped me up, which makes me feel like my body is not totally going to waste."
Mental well-being	EDUOPPTY	There is a lot of overlap in the physical and mental well-being associated with the classes on how to use the exercise equipment in the gym. Mentally, it makes women feel like they are learning a new skill, keeping their minds sharp.	I see most of the comments pertaining to positive mental well-being from the exercise equipment classes coming from the women who have been at the facility for a long time (more than 5 years).
Financial well-being	EDUOPPTY	The educational opportunities at the facility seem to give many women confidence that they can do something productive when they are released from prison and provide themselves with an income.	"I wonder how much I could sell my art for if I continued drawing when I leave here." "I have learned so much about how to properly use the exercise equipment, I am thinking about applying for a job at the fitness center when I'm released."

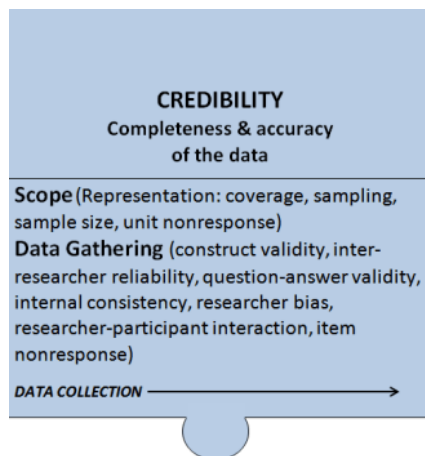
FIGURE 6.5. Example of a codebook and coding form for a hypothetical content analysis study of diaries written by women confined to the county correctional facility. Roller & Lavrakas (2015, p. 264)

- Construct validity also plays an important role in the **transparency** of the final research document. In the study report, the researcher can (and should) elaborate on the design, data gathering, and analysis decisions that were made pertaining to the key constructs, as well as the main themes that were derived from the data — i.e., the knowledge that was gained from the research — concerning these constructs.

Roller, M. R., & Lavrakas, P. J. (2015). *Applied qualitative research design: A total quality framework approach*. New York: Guilford Press.

Photo by [Bon Vivant](#)

Applying the TQF Credibility Component: An IDI Case Study



The **Total Quality Framework** (TQF) is an approach to qualitative research design that integrates quality principles without stifling the **fundamental and unique attributes of qualitative research**. In so doing, the TQF helps qualitative researchers develop critical thinking skills by showing them how to give explicit attention to quality issues related to conceptualization, implementation, analysis, and reporting.

The following case study offers an example of how many of the concerns of the Credibility (or data collection) component of the TQF were applied to an in-depth interview (IDI) study conducted by **Roller Research**. This case study can be read in its entirety in [Roller & Lavrakas](#) (2015, pp. 100-103).

Scope

This study was conducted for a large provider of information services associated with nonprofit organizations based in the U.S. The purpose was to investigate the information needs among current and former users of these information services in order to facilitate the development of “cutting edge” service concepts.

Eighty-six (86) IDIs were conducted among individuals within various grant-making and philanthropic organizations (e.g., private foundations, public charities, and education institutions) who are responsible for the decision to purchase and utilize these information services.

There were two important **considerations in choosing to complete 86 interviews**: (a) the required level of analysis – it was important to be able to analyze the data by the various types of organizations, and (b) practical considerations – the available budget (how much money there was to spend on the research) and time restrictions (the research findings were to be presented at an upcoming board meeting). In terms of mode, 28 IDIs, with the largest, most complex users of these information services, were conducted in-person, while the remaining 58 interviews were conducted on the telephone.

Participants were **stratified** by type, size, and geographic location and then selected on

an ***nth-name basis*** across the entire lists of users and former users provided by the research sponsor.

A high degree of **cooperation** was achieved during the recruitment process by way of:

- A preliminary letter sent to all sample members.
- Identification of the research sponsor (whose positive reputation strengthened the credibility of the research).
- A non-monetary incentive consisting of a summary of the research findings, which was highly desired by participants given their interest in knowing how others were using nonprofit information as well as others' reactions to several proposed concepts that were presented during the interviews.
- Utilizing one professional executive recruiter who was highly trained on how to gain access to and cooperation from decision makers. This recruiter shared office space with the researcher to facilitate a close interaction to discuss the scheduling needs of potential interviewees and work out ways to meet these needs to their satisfaction.
- Flexible scheduling, e.g., in-person interviewees were allowed to choose a location for the interview without restrictions, and all interviewees were permitted to select any time – day or night, weekday or weekend – for the interview.

Data Gathering

The researcher/interviewer, with over 30 years of professional experience, developed the interview guide and completed all 86 IDIs. The **validity and accuracy** of the research results were maximized by:

- Meeting with various managers within the sponsoring organization who had a vested interest in the outcome of the research – e.g., the president and CFO as well as the directors of research, programs, and communications – in order to gain a clear understanding of the research objectives and the constructs to measure.
- Learning as much as possible about the category via websites and literature particular to competitive providers of similar nonprofit information, how organizations use this information, and background details on each of the organizations that were included in the sample.
- Reviewing and deliberating with the sponsoring organization on multiple drafts of the interview guide for both the in-person and telephone IDIs.
- Organizing the **interview guide as a “funnel,”** moving from broad to narrow topics.
- Prioritizing topics so that the issues of most importance to the research objectives were consistently discussed in every IDI – e.g., opinions concerning other types of

information providers and the usability of specific features on the research sponsor's website.

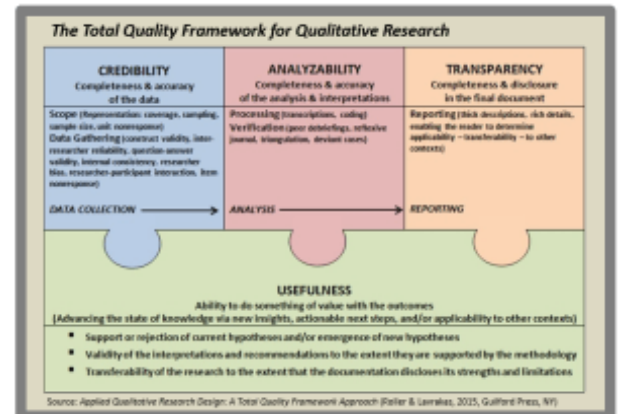
- Ensuring that each interviewee was a qualified participant. For instance, making a concerted effort during recruitment to track down the person within each organization that met all screener requirements including being the decision maker and user of nonprofit information.
- Scheduling IDIs at least two to three hours apart so the interviewer did not rush the interviews and allowed the interviewees to talk beyond the 45-minute time commitment (some in-person IDIs ran up to two hours and some telephone IDIs ran an hour or more).
- Building rapport with interviewees early in the process by way of emailing and telephoning recruited individuals to confirm the interview appointment and introduce the interviewer, along with providing contact information for the interviewee to use in order to request a change in the schedule or otherwise communicate with the interviewer. The interviewer also encouraged interviewees to ask questions about the research before, during, and after the IDI.
- Emphasizing at the onset of each interview that, even though the client was openly acknowledged as the sponsor of the research, the interviewee's candid opinions were essential to the success of the study. The interviewer reminded interviewees that she was not affiliated with the sponsoring organization and she had no vested interest in the research outcomes beyond the quality of the data, analysis, and reporting.
- Maintaining an informal **reflexive journal** in which the interviewer recorded her thoughts and observations of her conduct and that of her participants.

Roller, M. R., & Lavrakas, P. J. (2015). *Applied qualitative research design: A total quality framework approach*. New York: Guilford Press.

User Feedback in Software Development: A Rigorous Study Guided by the TQF

Ze Shi Li et al. (2024) conducted research to investigate the benefit of user feedback to software organizations' development process. Specifically, their overriding research question was, "How do software organizations manage user feedback to help improve existing products?" (p. 1). The researchers conducted 40 semi-structured in-depth interviews with engineers and data scientists across 32 organizations.

In the interest of rigorous research while mitigating potential threats to the validity of their research, the authors relied on the four components of the **Total Quality Framework (TQF)** — **Credibility**, **Analyzability**, **Transparency**, and **Usefulness**. The researchers describe their quality assessment by way of the TQF components as follows:



For credibility, our study may suffer from sampling bias as we could only talk to participants who agreed to interviews with us. However, our interviews indicated that all of our participants manage user feedback in some capacity, and a non-trivial number of participants believed that they were effective in managing user feedback. We also tried limiting bias by informing the interviewees at the beginning of interviews that participants would be anonymized and the study would not cause risk to them. For analyzability, we utilized tooling to assist with transcribing the audio into text and also manually verified the transcripts against the audio. Two co-authors followed the steps of grounded theory and conducted open, axial, and selective coding to analyze the transcripts. For transparency, we attempted to provide rich descriptions and quotes where possible, and make available a replication package containing our base interview questions and codebook. Due to confidentiality agreements, we cannot release the interview transcripts.

For usefulness, our study is intended to shed more insights on how software organizations manage user feedback. We provide more empirical results regarding the life cycle of activities and best practices that they utilize. We conducted member checking with 10 of the participants and presented all the findings that emerged from the study in checking that our research findings

resonate with our study participants and their organizational practices. We do not expect our results to hold true for all software organizations, though we would expect organizations of similar demographics to those in our studies to share similarities. (Li et al., 2024, p. 10)

From this research, the authors draw implications relevant for software organizations (e.g., best practices in managing user feedback) as well as researchers (e.g., the need for more research regarding the effect of organization size and maturity on the utilization of best practices).

Li, Z. S., Sihag, M., Arony, N. N., Ernst, N., Devathasan, K., & Damian, D. (2024). Unveiling the Life Cycle of User Feedback: Best Practices from Software Practitioners. *Proceedings – International Conference on Software Engineering*. <https://doi.org/10.1145/3597503.3623309>

A Rigorous Qualitative Study to Explore Type 1 Diabetes in Older Adults: Using the Total Quality Framework



In “Supporting the ‘lived expertise’ of older adults with type 1 diabetes: An applied focus group analysis to characterize barriers, facilitators, and strategies for self-management in a growing and understudied population” (Cristello Sarteau et al., 2024), the authors discuss their study among older adults (OAs, defined as adults 65 years of age or older) with type 1 diabetes concerning care management. This research consisted of nine in-person focus group discussions with a total of 33 OAs and caregivers.

Central to the design and implementation of this research was the Total Quality Framework (TQF) (Roller & Lavrakas, 2015). The authors selected the TQF due to their focus on rigor and a quality approach to investigate the lived experiences of OAs with type 1 diabetes.

To support rigorous research and reporting, we selected the Total Quality Framework (TQF), a comprehensive set of evidence-based criteria for limiting bias and promoting validity in all phases of the applied qualitative research process. (p. 2)

In this article, the authors provide a unique and useful table describing the rationale behind their methodological decisions pertaining to each component of the TQF, i.e., Credibility, Analyzability, Transparency, and Usefulness. For example, with respect to Credibility, the table offers a lengthy discussion of sample design, including the impact of limited resources on the recruitment process and why the size of each group discussion was kept to 4-5 participants. Other areas of discussion in the table include the coding format and identification of themes (Analyzability), complete disclosure of elements related to design, data collection, and analysis (Transparency), and “how the study should be interpreted, acted upon, or applied in other research context in the real world” (Usefulness). Importantly, readers are directed to areas within the article where they can read about the explanations of methodological decisions that go beyond the limited space of the table, e.g., definition of the target population.

This research “revealed, above all, the complex and dynamic nature of managing type 1 diabetes over the lifespan” and provided “valuable foundational information for future research efforts” (p. 13). In addition to the perceived strengths of the research, the authors’ quality approach also allowed for an informed discussion of the limitations (e.g., diversity in the sample). By way of the TQF Transparency component, the authors provide readers with the details they need to build on this research and move forward in defining care-management solutions for the OA population with type 1 diabetes. As the authors state, the TQF enabled them to “promote confidence in using results from our study to inform future decision-making” (p. 17).

Cristello Sarteau, A., Muthukkumar, R., Smith, C., Busby-Whitehead, J., Lich, K.H., Pratley, R.E., Thambuluru, S., Weinstein, J., Weinstock, R.S., Young, L.A. and Kahkoska, A.R., 2024. Supporting the ‘lived expertise’ of older adults with type 1 diabetes: An applied focus group analysis to characterize barriers, facilitators, and strategies for self-management in a growing and understudied population. *Diabetic Medicine*, 41(1), e15156.

Roller, M. R., & Lavrakas, P. J. (2015). *Applied qualitative research design: A total quality framework approach*. Guilford Publications.

Autism in Fictional Media: Using the TQF to Assess Research Quality

In the development of qualitative research design, the **Total Quality Framework** (TQF) plays an essential role towards maintaining a focus on quality standards. The TQF is also vital to fostering critical thinking skills when evaluating studies in the literature. The use of the TQF in literature reviews has been discussed elsewhere in *Research Design Review* – see **“Evaluating Quality Standards in a Qualitative Research Literature Review”** and **“The TQF Qualitative Research Proposal: Background & Literature Review.”**

These articles present a method for assessing the quality of published qualitative studies, with a focus on the Literature Review Reference Summary Evaluation Table. This matrix enables the researcher to think carefully about each relevant study from the standpoint of Credibility, Analyzability, Transparency, and Usefulness. In this way, the evaluation table “is predicated on the idea that not all qualitative research studies are equally reliable and valid.”

A qualitative content analysis study published in *Autism* (Jones et al., 2023) utilized the idea of the evaluation table but took it a step further. The authors collected 14 articles in the literature that addressed the research question, “How accurate and/or authentic are fictional media portrayals of autism?” To assess the quality of each study, the authors employed an “adapted version” of the TQF evaluation table. As shown in the authors’ Supplementary File 2 (see below and available open access), there are many ways that the sampled articles from the literature did or did not satisfy (or partially satisfied) the authors’ scrutiny of quality. In their evaluation, the authors considered 10 aspects of Credibility (5 for Scope, 5 for Data Gathering), 2 components of Analyzability (1 for Processing, 1 for Verification), 3 determinants of Transparency, and 3 for Usefulness, as seen in the following image.

Supplementary File 2. Quality appraisal of Part A studies using the Total Quality Framework (TQF)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Credibility: Scope														
Target population defined	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sampling approach defined	✓	✓	✓	✓	N/A ^a	✓	N/A ^a	✓	✓	N/A ^a	✓	✓	✓	✓
Techniques used to maximise inclusion of sample to mitigate potential bias	✓	✓	✓	✓	N/A ^a	✓	N/A ^a	✓	✓	N/A ^a	✓	✓	✓	✓
Identified unit of analysis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Credibility: Data gathering														
Relevant constructs are stated	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Coding framework stated	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Codebook/coding instrument is used and/or training on how to code data is provided	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Experience of coder/s stated*	✓	✓	✓	✓	✓	✓	✓	Partial	✓	✓	✓	✓	✓	✓
Consensus used to resolve coding conflicts	N/A ^b	✓	N/A ^b	✓	✓	N/A ^b	N/A ^b	✓	✓	✓	N/A ^b	N/A ^b	✓	N/A ^b
Analysability: Processing														
Categories/themes identified across codes	✓	✓	✓	✓	✓	N/A ^c	✓	N/A ^c	N/A ^c	✓	N/A ^c	✓	✓	✓
Analysability: Verification														
Verification process undertaken (e.g., peer debriefing, discussing with colleagues)	✓	✓	✓	Partial	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Transparency/Reporting														
Coders' reflections on the coding form, e.g., concerning problems they may have had in determining the appropriate code for particular content	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Techniques that were used to identify categories and themes, including the use of CAQDAS	✓	✓	✓	N/A ^c	✓	✓	N/A ^c	N/A ^c	N/A ^c	✓	N/A ^c	N/A ^c	✓	✓
Specific verification approaches that were used to support or refute preliminary interpretations and the results of the verification process, i.e., the extent to which verification altered the researcher's preliminary findings	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Usefulness														
Credibility issues discussed e.g., content sampling, unit of analysis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Interpretations provided	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Implications stated	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

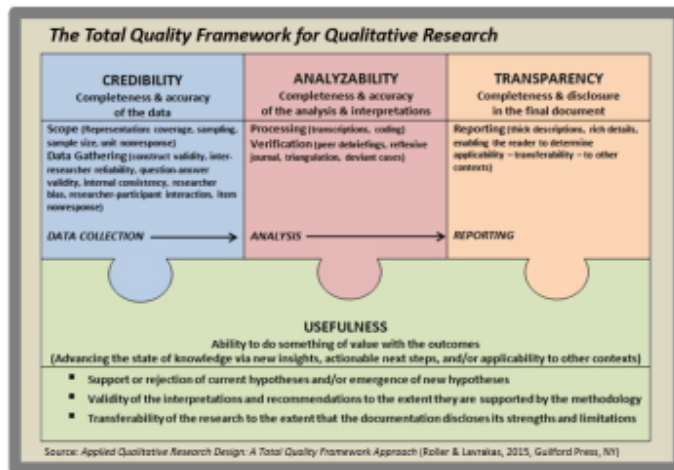
Note: 1 = Belcher (2014); 2 = Black (2019); 3 = Cardon (2016); 4 = Ejaz (2020); 5 = Ficarrotta (2018); 6 = Garner (2015); 7 = Holton (2013); 8 = Kelley (2015); 9 = Kelley (2018); 10 = Maich (2020); 11 = Nordahl-Hansen (2018); 12 = O'Neal (2013); 13 = Poe (2016); 14 = Wolff (2018); ✓ = Yes; ✗ = No; N/A = not applicable; * = additional item added to the TQF; N/A^a = there was no sample selection process as all media sources from the defined population were included; N/A^b = only one coder was involved; N/A^c = themes were not identified as they were pre-determined by the coding framework e.g., the DSM-IV diagnostic criteria;

A TQF approach to qualitative content analysis is discussed fully in **“A Quality Approach to Qualitative Content Analysis: Similarities and Differences Compared to Other Qualitative Methods”** (Roller 2019).

Jones, S. C., Gordon, C. S., & Mizzi, S. (2023). Representation of autism in fictional media: A systematic review of media content and its impact on viewer knowledge and understanding of autism. *Autism*. <https://doi.org/10.1177/13623613231155770>

Roller, Margaret R. (2019). A Quality Approach to Qualitative Content Analysis: Similarities and Differences Compared to Other Qualitative Methods. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, [S.l.], v. 20, n. 3, sep. 2019. ISSN 1438-5627.

Using the TQF to Assess Research Limitations: A Case Example



The **Total Quality Framework** (TQF) has been discussed many times in *Research Design Review*. Typically, the discussions center around: applying a quality approach to different aspects of qualitative research design such as **sample design** or a quality approach to different research methods such as **qualitative content analysis**, or an explanation of one of the four components of the TQF — **Credibility**, **Analyzability**, **Transparency**,

Usefulness — or the TQF approach to the **qualitative research proposal**. Although there have been a few articles on the limitations of qualitative methods and modes from a TQF perspective such as **“Limitations of the Focus Group Method: An Overview,”** there has not been an explicit discussion of utilizing the TQF to examine the limitations of *a particular research study*.

Luke David Bevan, a recent doctoral graduate of University College London, wrote a compelling thesis on **“Through a Model, Darkly: An Investigation of Modellers’ Conceptualisation of Uncertainty in Climate and Energy Systems Modelling and an Application to Epidemiology.”** This study set out “to understand how [computer modellers in climate science and energy systems] conceptualise the uncertainty of their work.” To this end, Dr. Bevan conducted 38 semi-structured in-depth interviews with modellers. Included in this nearly 500-page doctoral thesis is a discussion on the limitations of the research study. This discussion is organized around the TQF and its four components. It does this by highlighting potential shortcomings of the research design associated with the sample and data gathering (the TQF Credibility component), data processing and verification (the TQF Analyzability component), Transparency, and the ultimate Usefulness of the research outcomes.

The following are a few brief examples of the limitations identified in Dr. Bevan’s thesis:

TQF Component	Potential Limitation
Credibility	
Sample	Structure of the sample, asymmetry of the number of participants
Data Gathering	Interview protocol, questions were “generally about uncertainty and not specifically about individual things that a researcher may be uncertain about”
Analyzability	
Processing	Transcriptions and coding, coding the relationships between concepts was difficult
Verification	Only one researcher was involved in the analysis
Transparency	No limitation given. The author provides thick description, interview summaries, and “extensive quotes” from participants.
Usefulness	“Natural omissions of fruitful areas of discussion from different interviews” due to the “wide-ranging topic” and time constraints, some concepts that surfaced in the interviews were not explored in detail

As this case example shows, the TQF is an effective and efficient facilitator for thinking critically about qualitative research design. In particular, this case reminds researchers that critical thinking skills are essential *throughout* the research process, i.e., before and during the conduct of the research as well as when reflecting back on the completed study.