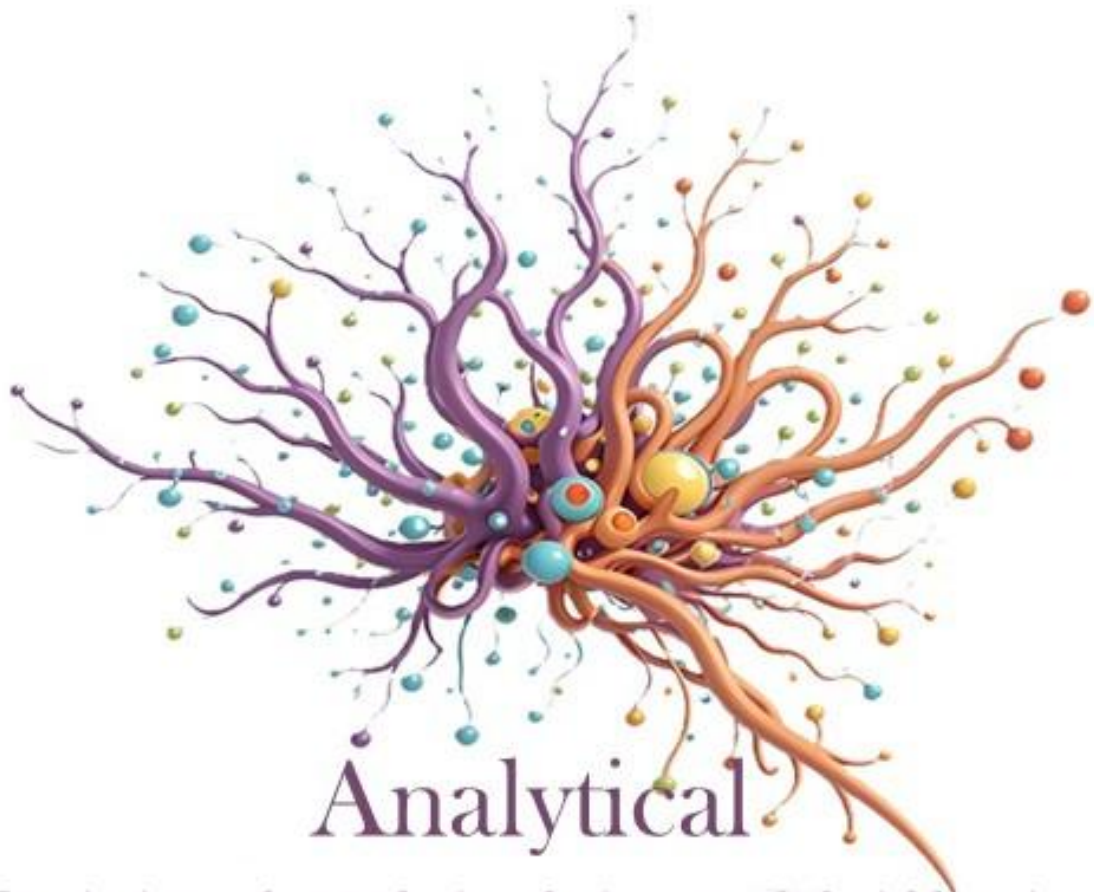




Analytical Critical Thinking Skills in Qualitative Research

7 Articles Highlighting
Key Moments in Qualitative Data Analysis
to Spark the Researcher's
Critical Thinking skills

Margaret R. Roller

The contents of this compilation include a selection of 7 articles appearing in *Research Design Review* in 2015-2024 that highlight key moments in the qualitative data analysis process that serve to spark the researcher's critical thinking skills. These articles represent a very small sampling of the articles in *RDR* devoted to qualitative data analysis, 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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Actively Conducting an Analysis to Construct an Interpretation

It is not uncommon for researchers who are reporting the results of their quantitative studies to go beyond describing their numerical data and attempt to interpret the meaning associated with this data. For example, in a survey concerning services at a healthcare facility, the portion of respondents who selected the midpoint on a five-point scale to rate the improvement of these services from the year before might be interpreted as having a neutral opinion, i.e., these respondents believe the caliber of services has remained the same, neither better nor worse than a year earlier. And yet there are other interpretations of the midpoint response that may be equally viable. These respondents may not know whether the services have improved or not (e.g., they were not qualified to answer the question). Or, these respondents may believe that the services have gotten worse but are reluctant to give a negative opinion.

Survey researchers fall into this gray area of interpretation because they often lack the tools to build a knowledgeable understanding of vague data types, such as scale midpoints. Unless the study is a hybrid research design (i.e., a quantitative study that incorporates qualitative components), the researcher is left to guess respondents' meaning.

In contrast, the [unique attributes of qualitative research methods](#) offer researchers the tools they need to construct informed interpretations of their data. By way of context, latent (coupled with manifest) meanings, the participant-researcher relationship, and other fundamentals associated with qualitative research, the trained researcher collects thick data from which to build an interpretation that addresses the research objectives in a profound and valuable manner for the users of the research.

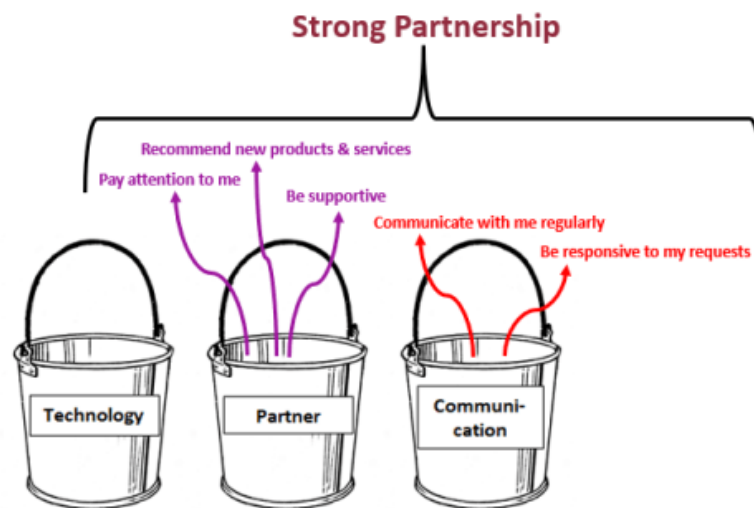
Qualitative data analysis is a process by which the researcher is actively involved in the creation of themes from the data and the interpretation within and across themes to construct results that move the topic of investigation forward in some meaningful way. This active involvement is central to what it means to conduct qualitative research. Faithful to the principles that define qualitative research, researchers do not rest on manifest content, such as words alone, or on automated tools that exploit the obvious, such as word clouds.

This is another way of saying — as stated in [this article on sample size and saturation](#) — that “themes do not simply pop up...but rather are the result of actively conducting an analysis to construct an interpretation.” As Staller (2015) states, “In lieu of the language

of ‘discovering’ things with its positivistic roots, the researcher is actually interpreting the evidence” (p. 147).

Braun and Clarke (2006, 2016, 2019, 2021) have written extensively about the idea that “themes do not *passively* emerge” (2019, p. 594, italics in original) from thematic analysis and that “meaning is not inherent or self-evident in data, that meaning resides at the intersection of the data and the researcher’s contextual and theoretically embedded interpretative practices – in short, that meaning requires *interpretation*” (2021, p. 210, italics in original).

An article posted in 2018 in *Research Design Review* — **“The Important Role of ‘Buckets’ in Qualitative Data Analysis”** — illustrates this point. The article discusses the analytical step of creating categories (or “buckets”) of codes representing shared constructs prior to building themes. As an example, the discussion focuses on three categories that were developed from an in-depth interview study with financial managers — Technology, Partner, Communication. The researcher constructed themes by looking within and across categories, considering the meaning and context associated with each code. One such theme was “strong partnership,” as illustrated below.

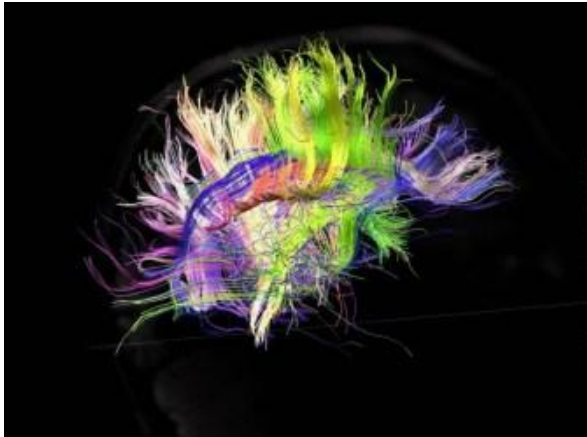


The theme “strong partnership” did not simply emerge from the data, it was not lying in the data waiting to be discovered. Rather, the researcher utilized their analytical skills, in conjunction with their constructed understanding of each participant’s contribution to the data, to create contextually sound, meaningful themes such as “strong partnership.” Then, with the depth of definition associated with each theme, the researcher looked within and across themes to build an interpretation of the research data targeted at the research objectives, providing the users of the research with a meaningful path forward.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>

- Braun, V., & Clarke, V. (2016). (Mis)conceptualising themes, thematic analysis, and other problems with Fugard and Potts' (2015) sample-size tool for thematic analysis. *International Journal of Social Research Methodology*, 19(6), 739–743. <https://doi.org/10.1080/13645579.2016.1195588>
- Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health*, Vol. 11, pp. 589–597. <https://doi.org/10.1080/2159676X.2019.1628806>
- Braun, V., & Clarke, V. (2021). To saturate or not to saturate? Questioning data saturation as a useful concept for thematic analysis and sample-size rationales. *Qualitative Research in Sport, Exercise and Health*, 13(2), 201–216. <https://doi.org/10.1080/2159676X.2019.1704846>
- Staller, K. M. (2015). Qualitative analysis: The art of building bridging relationships. *Qualitative Social Work*, 14(2), 145–153. <https://doi.org/10.1177/1473325015571210>

Finding Connections & Making Sense of Qualitative Data



The analysis of qualitative research data is no small thing. Because the very nature of qualitative research is complicated by the complexities inherent in being human, attempting to qualitatively measure and then make sense of behavior and attitudes is daunting. In fact, it is this overwhelming aspect of qualitative research that may lead researchers – who live in the real world of time and budget constraints – to succumb to a less-than-rigorous analytical process.

And yet, **Analyzability** is a critical component in qualitative research design.

All of the data collection in the world – all the group discussions, IDIs, observations, storytelling, or in-the-moment research – amounts to a meaningless exercise unless and until a thorough processing and verification of the data is conducted. Without the thoughtful work required to achieve a quality research product, qualitative data simply sits as an inert compilation of discrete elements lacking import.

Finding the connections in the qualitative data that make sense of the phenomenon, concept, or construct under investigation may, for some, be difficult and worthy of shortcuts; but proper analysis is the only thing that separates an honest, professional qualitative study from a random amalgamation of conversations or online snapshots.

In April of 2014, *Research Design Review* **discussed one facet of Analyzability, i.e., verification**. Verification, however, only comes into play after the researcher has conducted the all-important processing phase that converts qualitative data – that amalgamation of discrete elements – into meaningful connections that give rise to interpretations and implications, and the ultimate usefulness, of the research.

A quality approach to qualitative research design necessitates a well-thought-out plan for finding connections and making sense of the data. Here are six recommended steps in that process:

- **Select the unit of analysis** – a complete interview, group discussion, narrative, or piece of content.
- **Develop unique codes** – an iterative process utilizing a codebook that pays particular attention to context to derive explicit, closely-defined code designations.
- **Code** – a dynamic process that incorporates pretesting of codes, inter-coder checks, and coder retraining as necessary.
- **Identify categories** – a group of codes that share an underlying construct.
- **Identify themes or patterns** – by looking at the coding overall and the identified categories to reveal the essence of the outcomes. This may be made easier by way of visual displays via various programs such as PowerPoint and CAQDAS*.
- **Draw interpretations and implications** – from scrutinizing the coded and categorized data as well as ancillary materials such as reflexive journals, coders' coding forms (with their comments), and other supporting documents.

* Computer-assisted qualitative data analysis software, such as [NVivo](#), [Atlas.ti](#), [MAXQDA](#).

Image captured from: <http://www.breakthroughresults.co.uk/interim-management.php/>

The Limitations of Transcripts: It is Time to Talk About the Elephant in the Room

Transcripts of qualitative in-depth interviews and focus group discussions (as well as ethnographers' field notes and recordings) are typically an important component in the data analysis process. It is by way of these transcribed accounts of the researcher-participant exchange that analysts hope to re-live each research event and draw meaningful interpretations from the data. Because of the critical role transcripts often play in the analytical process, researchers routinely take steps to ensure the quality of their transcripts. One such step is the selection of a transcriptionist; specifically, employing a transcriptionist whose top priorities are accuracy and thoroughness as well as someone who is knowledgeable about the subject category, sensitive to how people speak in conversation, comfortable with cultural and regional variations in the language, etc.*



Transcripts take a prominent role, of course, in the utilization of any text analytic or computer-assisted qualitative data analysis software (CAQDAS) program. These software solutions revolve around “data as text,” with any number of built-in features to help sort, count, search, diagram, connect, quote, give context to, and collaborate on the data. Analysts are often instructed to begin the analysis process by absorbing the content of each transcript (by way of multiple readings) followed by a line-by-line inspection of the transcript for relevant code-worthy text. From there, the analyst can work with the codes taking advantage of the various program features.

An important yet rarely discussed impediment to deriving meaningful interpretations from this qualitative analysis process is the very thing that is at the center of it all – data transcripts. Although serving a utilitarian purpose, transcripts effectively convert the all-too-human research experience that defines qualitative inquiry to the relatively emotionless drab confines of black-on-white text. Gone is the profound mood swing that descended over the participant when the interviewer asked about his elderly mother. Yes, there is text in the transcript that conveys some aspect of this mood but only to the extent that the participant is able to articulate it. Gone is the tone of voice that fluctuated depending on what aspect of the participant's hospital visit was being discussed. Yes, the transcriptionist noted a change in voice but it is the significance and predictability of these voice changes that the interviewer grew to know over time that is missing from the

transcript. Gone is an understanding of the lopsided interaction in the focus group discussion among teenagers. Yes, the analyst can ascertain from the transcript that a few in the group talked more than others but what is missing is the near-indescribable sounds dominant participants made to stifle other participants and the choked atmosphere that pervaded the discussion along with the entire group environment. And gone of course are all the many mannerisms and physical clues that gave away the insights the researcher was looking for.

Transcripts are simply a device. Yet, even with the addition of ancillary non-converted data from audio and video recordings, transcripts are the typical center of the analysis universe. Unfortunately, they have the effect of distancing the researcher from the reality – so quickly lost – of an in-depth interview or group discussion. It is simply not possible to honestly imitate the participant-researcher relationship and co-constructed nature of qualitative research by way of a textual approach. So, it is curious why discussions on qualitative analysis are replete with how-to's on working with transcripts but devoid of an equally-active discussion on their limitations as a purveyor of qualitative data.

The deafening silence on the limitations of transcripts has become the elephant in the room. The behemoth void waiting to be filled with smart discussions on the true quality of our transcript data, what we can and cannot learn about our data in transcript form, alternative ways to use transcripts (in piecemeal or in whole), and how to perform an integrative analysis that offers real procedures for incorporating transcribed data with other formats.

* Discussions of the role of transcripts and transcriptionists in the quality of qualitative data (generally and specific to particular methods) can be found in: Roller, M. R., & Lavrakas, P. J. (2015). [Applied qualitative research design: A total quality framework approach](#). New York: Guilford Press.

Image captured from: <http://fineartamerica.com/products/elephant-in-the-room-wip-leah-saulnier-the-painting-maniac-poster.html>

The Qualitative Analysis Trap (or, Coding Until Blue in the Face)



There is a trap that is easy to fall into when conducting a thematic-style analysis of qualitative data. The trap revolves around coding and, specifically, the idea that after a general familiarization with the in-depth interview or focus group discussion content the researcher pores over the data scrupulously looking for anything deemed worthy of a code. If you think this process is daunting for the seasoned analyst who has categorized and themed many

qualitative data sets, consider the newly initiated graduate student who is learning the process for the first time.

Recent dialog on social media suggests that graduate students, in particular, are susceptible to falling into the qualitative analysis trap, i.e., the belief that a well-done analysis hinges on developing lots of codes and coding, coding, coding until...well, until the analyst is blue in the face. This is evident by overheard comments such as “I thought I finished coding but every day I am finding new content to code.”

Coding of course misses the point. The point of qualitative analysis is not to deconstruct the interview or discussion data into bits and pieces, i.e., codes, but rather to define the research question from participants’ perspectives and derive underlying themes that connect these perspectives and give weight to the researcher’s interpretations and implications associated with the research question under investigation.

To do that, the researcher benefits from an approach where the focus is not as much on coding as it is on “living the data” from each participant’s point of view. With this in mind, the researcher (the interviewer or moderator) begins by taking time after each interview or discussion to record key takeaways and reflections; followed by a complete immersion into each interview or discussion (from the audio/video recording and/or text transcript) to understand the participant’s nuanced and intended meaning. A complete absorption (understanding) of each interview or discussion prior to code development allows the researcher to fully internalize each participant’s relationship to the research question, taking into consideration that: 1) not everything a participant says has equal value (e.g., a “side conversation” between the interviewer and participant on a different topic, an inappropriate use of words that the participant subsequently redefines); 2)

participants may contradict themselves or change their mind during the interview/discussion which is clarified with help from the interviewer/moderator to establish the participant's intended meaning; and 3) the tone or emotion expressed by the participant conveys meaning and is taken into account to aid in the researcher's understanding.

This big picture sets the stage for code development and the coding of content. But now coding is less about the deconstruction of interview or discussion data and more about ensuring that each participant's lived experience related to the research question is intact and not lying unconscious in the qualitative analysis trap. Coding is simply a tool. A good thing to remember the next time you begin to feel blue in the face.

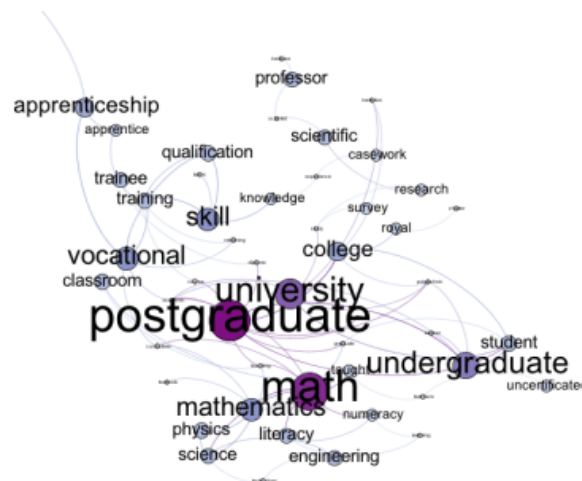
Image captured from: <http://learningadvancedenglish.blogspot.com/2016/04/until-you-are-blue-in-face.html>

Words Versus Meanings

There is a significant hurdle that researchers face when considering the addition of qualitative methods to their research designs. This has to do with the **analysis** – making sense – of the qualitative data. One could argue that there are certainly other hurdles that lie ahead, such as those related to a quality approach to data collection, but the greatest perceived obstacle seems to reside in how to *efficiently* analyze qualitative outcomes. This means that researchers working in large organizations that hope to conduct many qualitative studies over the course of a year are looking for a relatively fast and inexpensive analysis solution compared to the traditionally more laborious thought-intensive efforts utilized by qualitative researchers.



Among these researchers, efficiency is defined in terms of speed and cost. And for these reasons they gravitate to AI and text analytic programs and models powered by underlying algorithms. The core of modeling solutions – such as [word2vec](#) and [topic modeling](#) – rests on “training” text corpora to produce vectors or clusters of co-occurring words or topics. There are any number of programs that support these types of analytics, including those that incorporate data visualization functions that enable the researcher to see how words or topics congregate (or not), producing images such as this



<http://dilipad.history.ac.uk/2015/08/05/visualizing-parliamentary-discourse-with-word2vec-and-gephi/>

Words are important. Words are how we communicate and convey our thoughts. And the relationships between words and within phrases can be useful indicators of the topics and ideas we hope to communicate. Words, on the other hand, do not necessarily express *meaning* because it is how we *use* the words we choose that often defines them. How we use our words provides the context that shapes what the receiver hears and the perceptions others associate with our words. Context pertains to apparent as well as unapparent influences that take the meaning of our words beyond their proximity and imputed relationship to other words, or their use in recognized terms or phrases.

For example, by the words alone and without a contextual reference, it would be difficult to understand the meaning of the following comment made by a male focus group participant:

“A woman’s place is in the home.”

Was this participant making a comment on traditional values, or was he expressing intolerance on a broader scale, or was he emphasizing the importance of home and home life?

Context is also provided by the manner in which the words are spoken. An educator participating in an in-depth interview, for example, might state,

“I use technology in the classroom when I can!”

While another educator might state,

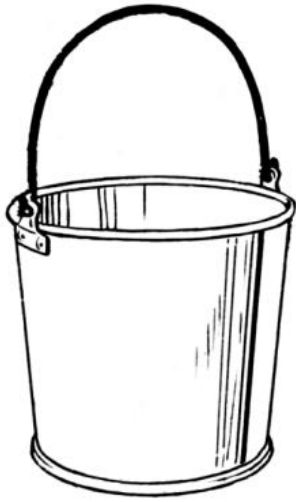
“I use technology in the classroom, when I can.”

The same words used in the same order but with different intended meanings.

So, those who want to incorporate qualitative methods into their research designs still face the hurdle of finding a “quick” and “low cost” alternative to the painstaking work of qualitative analysis. But awareness and the thoughtful consideration of the need to go beyond words – and find actual meaning – will ultimately lead to more accurate and useful outcomes.

Image captured from: <https://www.trustedtarot.com/cards/the-sun/>

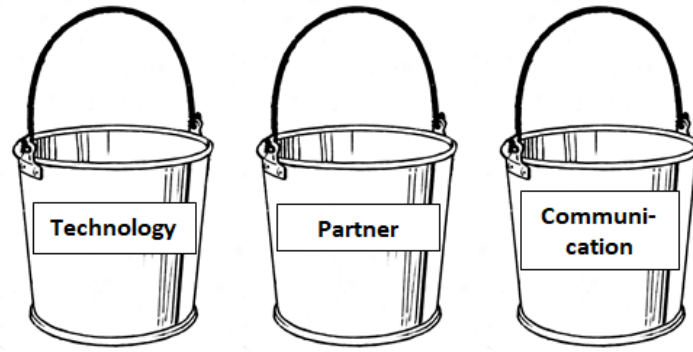
The Important Role of “Buckets” in Qualitative Data Analysis



An earlier article in *Research Design Review* – [“Finding Connections & Making Sense of Qualitative Data”](#) – discusses the idea that a quality approach to a qualitative research design incorporates a carefully considered plan for analyzing and making sense of the data in order to produce outcomes that are ultimately useful to the users of the research. Specifically, this article touches on the six recommended steps in the analysis process.* These steps might be thought of as a variation of the classic [Braun & Clarke \(2006\)](#) thematic analysis scheme in that the researcher begins by selecting a unit of analysis (and thus becoming familiar with the data) which is then followed by a coding process.

Unique to the six-step process outlined in the earlier *RDR* article is the step that comes after coding. Rather than immediately digging into the codes searching for *themes*, it is recommended that the researcher look through the codes to identify *categories*. These categories basically represent buckets of codes that are deemed to share a certain underlying construct or meaning. In the end, the researcher is left with any number of buckets filled with a few or many codes from which the researcher can identify patterns or themes in the data overall. Importantly, any of the codes within a category or bucket can (and probably will) be used to define more than one theme.

As an example, consider an in-depth interview study with financial managers of a large non-profit organization concerning their key considerations when selecting financial service providers. After the completion of 35 interviews, the researcher absorbs the content, selects the unit of analysis (the entire interview), and develops 75-100 descriptive codes. In the next phase of the process the researcher combs through the codes looking for participants’ thoughts/comments that convey similar broad meaning related to the research question(s). In doing so, the researcher might come up with five or six categories, including these three



Each bucket contains various codes that help define the category. The next step is to look within and across these categories to derive themes based on participants' similar meaning. In this example, the researcher extrapolated the theme “strong partnership” from codes in the Partner category – e.g., “pay attention to me,” “recommend new services or products,” and “be supportive” – and Communication codes – e.g., “communicate with me regularly” and “be responsive to my requests.” The theme “technical expertise” was developed from codes in the Technology bucket – e.g., “integrate software systems” and “utilize advanced credit card reporting” – as well as Partner codes – e.g., “offer creative solutions” and “help us with reporting.”

Any of the codes within the categories can be “re-used” to define multiple themes. So, for instance, one or more of the codes associated with the “strong partnership” and “technical expertise” themes might also help to identify the theme “experience and knowledge of the industry.”

No one said that qualitative data analysis is simple or straightforward. A reason for this lies in the fact that an important ingredient to the process is maintaining participants' context and potential multiple meanings of the data. By identifying and analyzing categorical buckets, the researcher respects this multi-faceted reality and ultimately reaps the reward of useful interpretations of the data.

*Based on the Total Quality Framework. This framework and six general steps in qualitative research analysis are discussed fully in [Applied Qualitative Research Design: A Total Quality Framework Approach](#) (Roller, M. R. & Lavrakas, P. J., 2015. New York: Guilford Press).

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>

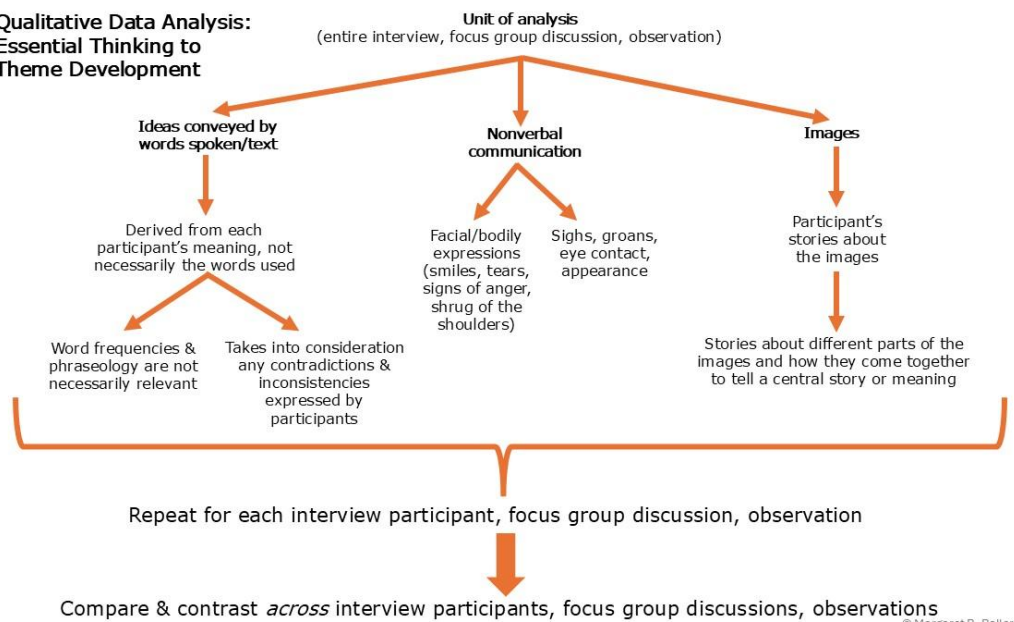
Qualitative Data Analysis: Essential Thinking to Theme Development

There are many articles in *Research Design Review* concerning qualitative data analysis. These articles range from discussions of broad topic areas — such as [“Contextual Analysis: A Fundamental Attribute of Qualitative Research”](#) — to articles that are focused on a particular aspect of the analysis process — such as the unit of analysis ([“Qualitative Data Analysis: The Unit of Analysis”](#)), use of transcripts ([“The Limitations of Transcripts: It is Time to Talk About the Elephant in the Room”](#)), coding ([“The Qualitative Analysis Trap \(or, Coding Until Blue in the Face\)”](#)), category development ([“The Important Role of “Buckets” in Qualitative Data Analysis”](#)), and themes ([“Qualitative Data Analysis: What Is A Theme?”](#)).¹

Throughout many of the discussions in *RDR* pertaining to qualitative data analysis, the emphasis is on an idea that is essential to the analysis process; that is, the need for the researcher to give explicit attention to the entirety of the unit of analysis (e.g., an entire in-depth interview or focus group discussion), while maintaining the integrity of each unit’s contribution.² In this way, the researcher effectively builds categories from which they derive themes.

Maintaining the integrity of each participant, focus group, or observation encompasses what is said (text) and not said (nonverbal communication) as well as other components of the research engagement such as images. It is only after the researcher analyzes each unit of analysis that they begin their analysis across all cases with the ultimate goal of theme development. This is clarified in the image shown on the next page.

Qualitative Data Analysis: Essential Thinking to Theme Development



¹ A compilation of 16 articles on qualitative data analysis can be found [here](#).

² The idea of maintaining the integrity of each case is discussed in [“A Holistic Approach to Qualitative Analysis”](#) and elsewhere in *RDR*.