

OPA EVALUATION TA



Qualitative Analysis How to Guide

What is qualitative analysis?

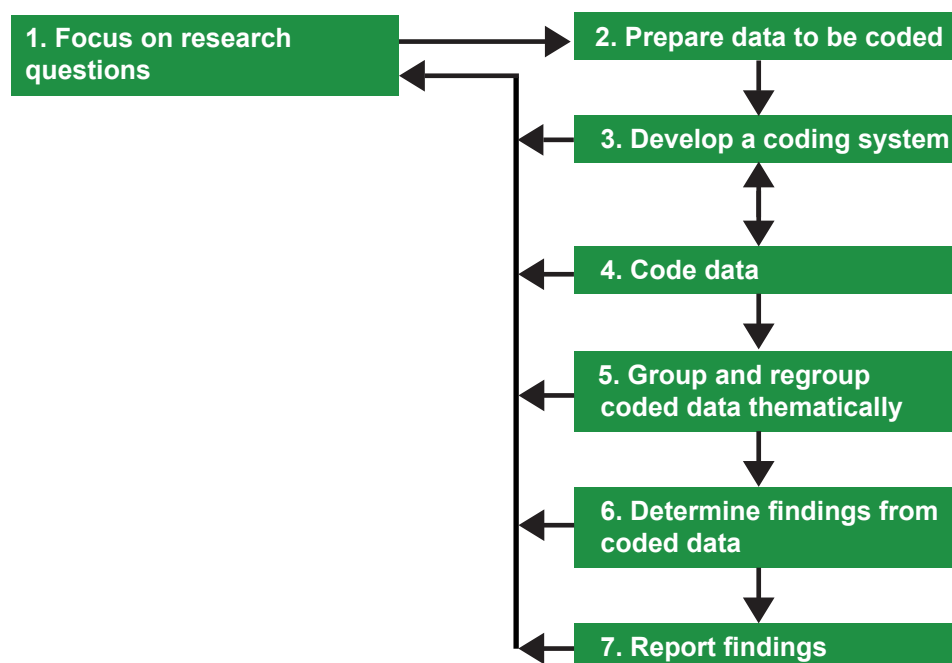
Qualitative analysis is a way to answer research questions by systematically finding patterns in qualitative, or nonnumeric, data, such as data from interviews, focus groups, and observations.

Qualitative analysis can help you understand how program staff implemented programs; examine contextual factors that could have affected implementation; explore why a program was or was not able to meet target outcomes or goals; and understand the nuanced viewpoints and experiences of multiple stakeholders, such as participants, staff who deliver the program, and key decision makers.

This **How to Guide** is intended for a research audience. It provides detailed instructions on how to prepare and analyze qualitative data.

OVERVIEW OF THE STEPS TO CONDUCT QUALITATIVE ANALYSIS

Note. As you go through steps 2 to 7, you will want to continually refer back to your research questions to ensure you align every step of your analysis to the research questions.





How to **conduct** qualitative analysis

STEP 1

Focus on research questions. Before conducting your analysis, review your research questions and refine as needed so they reflect the current goals of your study. Once the research questions are finalized, refer back to them while analyzing and reporting findings to ensure the analyses and reporting are aligned to the research questions.

STEP 2

Prepare data to be coded.

Step 2a. Create clean data files. Your data might be in a format that is difficult to analyze immediately following data collection (for example, handwritten or rough notes, or audio or video recordings). The goal of creating clean data files is to have a text file that can be analyzed and is easy for anyone to understand. To create clean data files, fix spelling and grammar issues, fill in missing words, and explain unclear terms or phrases. If you have audio or video recordings, type up a transcript or detailed notes based on the recordings.

Ideally, the person who collected the data will also clean the data files. Preferably, your team will perform this step soon after you collected the data so the data collectors can use their memory to fill in any gaps.

Example 2.1. Example of raw data and cleaned data

Raw notes from facilitator interview	Clean notes
Sometimes the content of the discussion questions is too babyish for the kids, but question vocab too hard sometimes for them. Like "Why do you show affection to someone?" The kids don't know what "affection" means, but they think it's silly to explain why you give someone a hug.	Sometimes the content of the discussion questions is too babyish for the kids, but the question vocabulary is sometimes too hard for them. Like "Why do you show affection to someone?" The kids don't know the word "affection", but they think it's silly to explain why you give someone a hug.

Note. The **bold and underlined** font indicates the edits made to clean interview notes to make them easier to understand.

Step 2b. Name the data file. Develop a consistent convention for naming data files that includes descriptive information about the data. A descriptive file name is helpful when you have a large number of files because it tells you what information is in the file. You might

include information like the site name; participant type; data source; date of data collection; and whether data were collected before, during, or after the program. For example, "GirlsandBoysClub_Facilitator_Interview_2019-11(Nov)_MidProgram".

Step 2c. Add clean data files to a database. We recommend that you use a qualitative software program (such as NVivo or Atlas.ti), because these programs can organize data and support coding and analyses. If you are unable to use a qualitative software program, you can also code data using word processing and spreadsheet software programs (such as Microsoft Word and Excel, or Google Docs and Sheets).

STEP 3

Create codes and develop a coding system.

A code is a concept or label that researchers use to assign meaning to data and to group similar data together.

Researchers will develop a coding system, which is a list of the codes that that will help answer the research questions and definitions or descriptions of what each code means. Usually the codes are organized by the research questions they are related to (see Example 3).

There are two methods to develop codes (which researchers typically use in combination):

1. Create codes before coding based on prior knowledge of the topics, existing research, and Office of Population Affairs (OPA) core themes, if applicable.
2. Create codes while coding. As you encounter new ideas and topics in the data, add relevant codes to the coding system.

What is the right level of detail when developing codes?

Some researchers prefer to create very specific codes and then group the data under those codes into broader codes or themes (and that is the process that this tip sheet presents). Other researchers prefer to apply broader codes and then go through the data under the broader codes and assign specific codes. Because there is not one right way to develop codes, consider trying both ways to determine what is most efficient for you and your team.

Because codes can be generated before and while coding, it is best practice to track the date when you created each code in the coding system and the date when you coded each data file. This information will help you track whether you need to return to documents you already coded to apply any newly developed codes.

Example 3. Coding system

Research question: What were key challenges the program team faced when implementing the curriculum?

Codes	Definition	When code was created
Scheduling and timing	Issues scheduling or issues with the timing of the sessions or program	Before coding
Unresponsive participants	Participants not responsive to the curriculum, lessons, and so on	Before coding
Vocabulary too challenging	Vocabulary was too difficult for participants to understand	1/15/2020
Issues with literacy or texts	Participants not interested in curriculum that requires reading and writing and participants don't want to read long text passages	1/22/2020

STEP 4 Code data using the coding system.

Before coding, review the data (for example, skim notes from an interview) to get an overview of all topics covered. Starting with a holistic understanding of the data is important because when assigning codes to the data, you focus on small portions of the data at a time. To code, read each sentence in the data carefully and assign codes to portions of the data, as appropriate, while you read. You might need to apply multiple codes to one portion of text if it discusses multiple topics of interest. As you review data and code, keep the research questions in mind and ensure the codes capture all themes aligned with the research questions.

Example 4. Coding data

Codes	Data from facilitator interview (Woodrow site)
Scheduling and timing	<p>Some of the kids didn't want to read or be read to, but all the lessons involve reading. Everything is reading. Or writing. Reading or writing. They like the discussion but not the reading or writing. They really like the discussion when the questions are right. Sometimes the discussion questions are too babyish for them. Although it may be the content of the questions is too young because the question vocabulary is sometimes too hard. Like "Why do you show affection to someone?" The kids don't know the word "affection", but they think it's silly to explain why you give someone a hug.</p>
Unresponsive participants	
Disruptions to sessions	
Late arrivals	
Early departures	
Curriculum not appropriate for participants' age	<p>Curriculum not culturally or linguistically appropriate</p> <p>Vocabulary too challenging</p> <p>Issues with texts or literacy</p>
Curriculum not culturally or linguistically appropriate	
Vocabulary too challenging	
Issues with literacy or texts	

Note. Three codes apply to the data in this example: (1) curriculum not appropriate for age, (2) vocabulary too challenging, and (3) issues with text or literacy. The code "Curriculum not appropriate for age" applies to the sentences highlighted in yellow. The code "Vocabulary too challenging" applies to the sentences that are **bolded and underlined**. The code "Issues with texts or literacy" applies to the sentences highlighted in green.

Having multiple coders code data. If you have multiple coders, it is critical to train all coders to establish a common understanding of the codes and process. In an initial training, review the purpose of the evaluation, the research questions, how to use the software, each code and definition, and—if you plan to have your coders create codes—when and how to generate and document new codes.


After the initial training, ask the coders to code the same data (for example, notes from a specific interview) and check the codes to make sure that they coded the same portions of the data with the same codes. If there are areas of disagreement, review why codes should have been applied and revise definitions to improve clarity for the team. If there are a lot of discrepancies between coders, you will want to code additional documents together and review coding until all coders demonstrate that they code accurately and code consistently with the other coders. Be sure to

regularly check coders' work to ensure they continue to code accurately and consistently. Provide additional training as needed to review areas of disagreement.

In addition to ensuring that coders are coding in the same way, having coders code a subset of the same data also allows you to assess inter-coder reliability or the degree of agreement or consensus in how coders apply the codes. Researchers will usually include intercoder reliability in their reports, which is one measure of coding quality.

STEP 5 **Group and regroup coded data by theme.** After the data are coded, you might find that some of the codes are too specific and would be more meaningful if grouped together. Before grouping codes, review all data assigned to each code to ensure the data are related to one another thematically and that it makes sense to group the codes and the data assigned to the codes. As you review coded data, you might find more codes are related and, therefore, engage in the grouping and regrouping process a few times.

Example 5. Grouping related codes together into a broader code by theme

Related specific codes:	Name of broader code
Curriculum not appropriate for age	
Curriculum not culturally or linguistically appropriate	
Vocabulary too challenging	
Issues with literacy or texts	
Troublesome examples in curriculum	

Note. Each code listed on the left is very specific but related to a common issue of the curriculum being misaligned to participants' skills and interests. All data under the specific codes can be grouped under the broader code "Misalignment of curriculum." You can retain specific and broader codes in the data set.

STEP 6 **Identify the key findings from coded data.** Identifying key findings is necessary to meaningfully answer research questions. Even after grouping specific codes into broader codes, you might still have a long list of codes. You will have to identify what information is most meaningful to answer the research questions based on prior research, prior knowledge, and your program or logic model.

To identify key findings, you might decide to include the codes that most frequently affected facilitators, sites, or participants (note that in addition to your qualitative data, you might need to examine other data sources to corroborate that the codes affected facilitators, sites, or participants, such as your enrollment and attendance data). You might also examine codes that are particularly influential or important based on substantive reasons from prior research, your prior knowledge, and your program or logic models, regardless of the numbers of facilitators, sites, or participants that were affected.

One way to determine key findings is to create decision rules and apply them systematically across research questions. You can create decision rules based on the program and evaluation logic model, prior research, and knowledge about the program and target population. After you establish decision rules, it is best practice to document these rules and describe them in the methodology section of an article or report.

Example 6. Applying decision rules to coded data to determine findings

Research question: What were key challenges the program team faced when implementing the curriculum?

Decision rules as determined by the researchers: (1) The challenge outlined in the code affected at least half of the students, OR (2) There is a substantive reason to include the challenge outlined in the code that affected at least one student

Codes	Estimated number of students affected (of 80 total students)	Potential substantive reasons	Should this code be included as a finding?
Scheduling and timing	5	Although scheduling and timing are critical to be able to implement the curriculum, these issues were minor and did not affect implementation.	No. This challenge affected fewer than half of the students. There is no substantive reason to include this challenge because it did not affect implementation.
Unresponsive participants	60	Student engagement in lessons (discussions, activities) is part of the program model.	Yes. This challenge affected more than half the students. There is also a substantive reason to include this challenge because participant engagement is a requirement of the program model.
Disruptions to sessions	45	Disruptions to sessions can impede implementation and reduce the content students receive.	Yes. This challenge affected more than half the students. There is also a substantive reason to include it because it negatively affected programming for students.
Late arrivals	0	Curriculum developers stated that students must be present at the beginning of each session.	No. This challenge did not affect any students.
Early departures	10	Curriculum developers stated that students should receive all content. However, students that left sessions early made up the content they missed.	No. This challenge affected fewer than half the students. This challenge did not have a substantive reason to be included because students still received all content.
Curriculum misalignment	30	The logic model indicates that for students to experience the benefits of the curriculum, the curriculum must align with their needs.	Yes. Although this challenge affected fewer than half the students, there is a substantive reason to include this. The curriculum must align with students' needs.

Note. Decision rules in the example were based on a logic model indicating that the majority of students should receive the curriculum and programming and identifying conditions for successful curriculum implementation.

STEP 7 **Report findings.** When reporting qualitative findings, describe the meaning of the findings and the significance of the findings in a way that clearly addresses research questions (Example 7.1). Making connections between findings and significance of findings is how you *tell the story* of the data.

When reporting findings, ensure that the language you use reflects that you used qualitative methods and use qualitative data to explain and help your readers connect to the findings (Example 7.2).

Use illustrative quotes or examples; background information and context; and sample writings, drawings, or images—if your institutional review board allows you to use these types of information (Example 7.3).

Example 7.1. Reporting the significance of the findings

A key challenge the program team faced when implementing the curriculum was misalignment between aspects of the curriculum and students' needs.

One type of curriculum misalignment was that the language was too advanced for students. Two of the five facilitators stated that they spent at least 10 minutes of every hour-long session reviewing complex vocabulary—such as “brusque” and “anachronistic”—that were not related to the content.

The time spent teaching definitions reduced the time available for mentorship activities. Students reported in focus groups that they found mentorship activities to be the most valuable because they could connect the dense content to their own experiences. As one student reported, “The best part is talking in [our mentorship] group. That’s when I’m like, ‘Oh that kind of convo happened to my friends and me, too.’”

Facilitators addressed this challenge by...

Note. The text that is **bold and underlined** explains why complex vocabulary is significant beyond that it was too advanced for students and not related to content. The challenge of complex vocabulary interfered with what respondents deemed the most important part of the program: mentorship activities.

Example 7.2. Use of language that shows the methods used

A key challenge the program team faced when implementing the curriculum was misalignment between aspects of the curriculum and students' needs.

One type of curriculum misalignment was that the language was too advanced for students. **Two of the five facilitators stated** that they spent at least 10 minutes of every hour-long session reviewing complex vocabulary—such as “brusque” and “anachronistic”—that were not related to the content. The time spent teaching definitions reduced the time available for mentorship activities. **Students reported in focus groups** that they found mentorship activities to be the most valuable because they could connect the dense content to their own experiences. **As one student reported,** “The best part is talking in [our mentorship] group. That’s when I’m like, ‘Oh that kind of convo happened to my friends and me, too.’”

Facilitators addressed this challenge by...

Note. The text that is **bold and underlined** shows the use of language that accurately reflects the methods used. Phrases such as “Facilitators stated...” and “Students reported...” indicate that data were from qualitative sources.

Example 7.3. Use of an example and respondent quote from the data

A key challenge the program team faced when implementing the curriculum was misalignment between aspects of the curriculum and students' needs.

One type of curriculum misalignment was that the language was too advanced for students. Two of the five facilitators stated that they spent at least 10 minutes of every hour-long session reviewing **complex vocabulary—such as “brusque” and “anachronistic”**—that were not related to the content. The time spent teaching definitions reduced the time available for mentorship activities. Students reported in focus groups that they found mentorship activities to be most valuable because they could connect the dense content to their own experiences. As one student reported, **“The best part is talking in [our mentorship] group. That’s when I’m like, ‘Oh that kind of convo happened to my friends and me, too.’”**

Facilitators addressed this challenge by...

Note. The text that is **bold and underlined** shows how to use examples and a quote from the data in reporting findings. The examples of complex vocabulary and the student quote are not necessary to convey the finding, but they add to a reader’s understanding and help ground the finding in concrete examples.

Qualitative Analysis: Dos and Don’ts

- ✓ Do align all steps of your analysis with the research questions.
- ✗ Don’t refine research questions after you have started coding and analyzing the data.
- ✓ Do follow systematic processes to organize and code data.
- ✗ Don’t code and analyze data from data sources that will not answer the research questions.
- ✓ Do develop a clear and detailed coding system and allow it to evolve over time.
- ✗ Don’t include confidential or personally identifiable information when reporting findings (for example, quotes that could be attributed to a specific individual).
- ✓ Do determine what findings to include in your report by applying decision rules to identify the most meaningful codes to answer the research questions systematically.
- ✓ Do include details, quotes, and examples to communicate findings in an accessible and meaningful way.



FAQs



When should I conduct qualitative analysis instead of quantitative analysis? This depends on your research questions. If you want to learn how the program was implemented, additional context to implementation, how participants experienced the program, or why the program did or did not affect participants' outcomes, qualitative analysis is the appropriate choice to provide needed information. If you want to understand whether a program was effective, quantitative analyses of survey or administrative data is the appropriate method.

What do I do if my raw data are difficult to understand? If you are unable to understand the raw data and do not have a back-up (for example, a back-up to audio recordings of an interview might be handwritten notes taken during the interview), then you might have to exclude portions of data you are unable to decipher.

For planning purposes, how long does it take to conduct qualitative analysis? Qualitative data can be quite time consuming. It takes time to create clean and detailed notes or a transcript, time to create codes and a coding system, time to code the notes or transcript, and then time to determine what your key findings are. For a 60-minute-long interview, you might plan for an hour to create clean and detailed notes or two hours to transcribe an audio recording of the interview. Plan to take 30 minutes to code the notes or transcript. Keep in mind that coding may take longer at first, but then less time as coders become familiar with the coding system and process. It is harder to give estimates on how long it takes to create codes and a coding system or to determine key findings because these activities are so dependent on the number of research questions, how many codes, and how much data you have.

How do I protect respondents' confidentiality if I am including quotes or examples as part of my findings? If you are using quotes or examples, be sure to review these sections and remove confidential information like names of participants, sites, and locations. You can include pseudonyms or describe locations in descriptive terms (for example, small, rural midwestern town).

How do I make sure that my results are high quality and trustworthy? Be systematic. Focus your analyses on answering your research questions, use a clear coding system, regularly check to make sure that coders are coding consistently and accurately, and apply decision rules systematically to identify findings. Lastly, be sure to report analytic steps in the methods section of your journal article or report so that you are being transparent about your process.

Do you have any recommendations for analyzing qualitative data for continuous quality improvement (CQI) purposes versus reporting? With CQI, the goal is to use your data to make decisions rapidly, sometimes while program staff members are delivering the program. The type of systematic analyses described in this tip sheet might be too time and labor intensive to align with CQI timelines and to support ongoing decision making. You might, however, use some of the same data for your CQI processes.

If you have more flexibility to do the type of qualitative analyses described in this tip sheet as part of your CQI processes, you could do so on a subset of the data (such as by randomly choosing 20% of the data to analyze). Focusing on a subset of the data, rather than the full dataset, allows you to engage in this type of intensive qualitative analysis in a timely way.

What do I do if I come across contradictory information in my data? It is likely that you will encounter contradictory information because qualitative data are usually collected from participants who have different perspectives and experiences. It is important to present contradictions when you report your findings and, if possible, explain why the contradictions are present and what implications they have for future implementation.

Is it better to develop codes before reviewing the data? It is best to develop codes both before reviewing data and while you review and code data.

Examples of qualitative analysis software

- ATLAS.ti (<https://atlasti.com>)
- Dedoose (<https://www.dedoose.com/>)
- NVivo (<https://www.qsrinternational.com/nvivo/home>)
- Transana (<https://www.transana.com/>)

Additional resources

Burla, L., Knierim, B., Barth, J., Liewald, K., Duetz, M., & Abel, T. (2008). From text to codings: intercoder reliability assessment in qualitative content analysis. *Nursing Research*, 57(2), 113-117. doi: 10.1097/01.NNR.0000313482.33917.7d

Miles, M. B., Huberman, A. M., & Saldaña, J. (2018). *Qualitative data analysis: An expanded sourcebook* (4th ed.). Thousand Oaks, CA: SAGE Publications, Inc.

National Institute for Health. (2018). *Qualitative methods in implementation science*. Bethesda, MD: National Cancer Institute.

Patton, M. Q. (2002). Two decades of developments in qualitative inquiry: A personal, experiential perspective. *Qualitative Social Work*, 1(3), 261–283. doi:10.1177/1473325002001003636

U.S. Department of Health and Human Services. (2016). *Qualitative research methods in program evaluation: Resources for federal staff*. Washington, DC: Office of Data, Analysis, Research, and Evaluation and Administration on Children, Youth, & Families.

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