

# Tips and Tricks for Open Ended Response Analysis

Within teaching and learning contexts, open-ended responses (e.g., from surveys, written reflections, and student coursework) are a common way to collect rich data around student learning and experiences. This resource provides an introductory guiding framework with examples for how to analyze these responses using thematic analysis.

## How to get started with analyzing your data

The first and most critical step before you start analyzing your data is to reflect back on your research questions and goals. It's important for you to consider:

- What are you trying to learn from this data?
- Who/what will this analysis impact?
- How will the findings inform future work/approaches?

Thinking through these questions and answers will provide structure for how you will investigate the data in alignment with your research questions.

1. Keep the original data set and make a copy to be used for analysis
2. If needed, create an anonymized or de-identified version of the data set
3. Considering your research/evaluation goals, organize your data in relation to particular groups (e.g., demographics, performance, cohorts)

→ If analyzing a particularly large data set, consider dividing the questions up among various members of the research team, prioritizing the most important responses/questions, and/or selecting a random subset of responses to analyze.

As you engage in the data analysis for open-ended responses, it's important to document the process you have taken. This will allow you to track/justify the decisions you've made, note challenges or limitations, and flag issues needing further consultation. This is particularly important to improve transparency and clarity, especially when multiple people are analyzing a data set collectively. This documentation is also useful to include as part of the methodology section within communications.

## Basic guidelines for thematic analysis

The following guidelines draw upon Nowell, Norris, White, and Moules (2017) work that helps to guide researchers new to thematic analysis in research. Below are a few definitions that are helpful to know before getting started with your analysis.

- **Codes:** short, descriptive labels or categories.
- **Themes:** descriptive phrases or sentences that may encompass multiple codes.
- **Thematic analysis:** “a method for identifying, analyzing, organizing, describing, and reporting themes found within a data set” (Braun & Clarke, 2006).
- **Inductive approach:** use the present dataset to create codes, which develop into themes.
- **Deductive approach:** use pre-existing codes or themes (based on literature, theory, previous research) and apply these to the data. Note: These can be changed/removed/added as relevant for your dataset.

## Steps and considerations for thematic analysis

- 1. Get to know your data and identify patterns.** Read through the set of comments/responses and record emerging themes. If you have a particularly large data set, you could read a subset (5-20%) to help generate some common themes.
- 2. Create a coding scheme.** Based on the emerging themes, create codes to help categorize the responses (see Figures 1 and 2 for examples). We recommend using Excel when getting started with documenting the codes in your dataset.
  - a) Consider whether further categorization of the codes is useful.** You may want to divide codes by sentiment: positive, negative, conditional (i.e., responses relating to communication might be positive or negative or depend on the activity). Dividing the codes will be helpful for later comparing and contrasting themes.
- 3. Code the data.** Review the responses based on the codes you’ve created. Do not forget to code for ambiguous or “hard to code” responses so that you can review them with others later.
  - a) Keep track of representative responses.** Flag responses that you think are highly representative and could be used to highlight the underlying tone of the themes in the form of a quote. Be sure that you have student consent to use anonymized quotes before they are shared.
- 4. Discuss responses.** After your first round of coding, discuss with a colleague any ambiguous or “hard to code” responses, and any codes that have begun to overlap or need to be further distinguished. Re-code as necessary.
- 5. Engage in interrater reliability (whenever possible).** Have someone review a subset or all of the responses to ensure consistency in how the responses were coded. Discuss and resolve mismatches in the coding.
- 6. Create summaries based on the coding results.** This is an intermediate step for summarizing the main findings and themes that came from the coding of the open ended responses (see Figure 3). It is an opportunity to explore what trends are emerging.
- 7. Reflect on how this analysis relates to the research question(s) and determine what the major findings are.** This is an opportunity to compare and contrast the emergent themes and to explore the similarities/uniqueness among different groups of participants.

## Communicating your findings more broadly

Before communicating your findings to a broader audience, consider:

- Who is your audience?
- What format will the dissemination take? (i.e., departmental discussion, lunch-and-learn, internal report, conference presentation, journal article)
- What level of detail is necessary to convey the findings?

Once you have answered these questions, determine the most important pieces to be shared. Depending on the answers to the items above, your output may look very different (e.g., figures, tables, and prose). Figure 4 and Figure 5 illustrate potential ways to organize findings from open ended response analysis.

## Additional Support

If you would like to talk with someone about your teaching and learning project and analysis, please reach out to [ctl.t.isotl@ubc.ca](mailto:ctl.t.isotl@ubc.ca) for additional support.

## References

Braun, V., & Clarke, V. (2012). *Thematic analysis*. American Psychological Association.

Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). *Thematic Analysis: Striving to Meet the Trustworthiness Criteria*. *International Journal of Qualitative Methods*, 16(1), 1609406917733847.

Welsh, A. J. (2012). *Exploring Undergraduates' Perceptions of the Use of Active Learning Techniques in Science Lectures*. *Journal of College Science Teaching*, 42(2), 80–87.

## Appendix

Figure 1: Sample coding layout for thematic analysis

Anonymous ID	Survey question/item (e.g. what did you like best about this course?)	Coding						Other relevant variables (e.g. demographics; performance; cohorts)
		Code 1	Code 2	Code 3	Code 4	Other	Hard to code	
1	Response 1							
2	Response 2							
3	Response 3							
4	Response 4							

Figure 2: Sample coding layout for written assignments

Anonymous ID	Survey Question: What did they do well in their writing?	Coding			
		Survey Question: What did they do well in their writing?	Code 2: Sentences (clear connections; grammar; themes)	Code 3: Good organization of ideas	Code 4: Good examples (relevant; interesting; specific)
1	Response 1				
2	Response 2				
3	Response 3				

Figure 3: Sample summary of coded responses

	Number of Respondents
Code 1: Logical structure/ideas	23
Code 2: Sentences (clear connections; grammar; themes)	28
Code 3: Good organization of ideas	24
Code 4: Good examples (relevant; interesting; specific)	35

Figure 4: An example of how student perceptions of course elements could be visualized in a bar graph

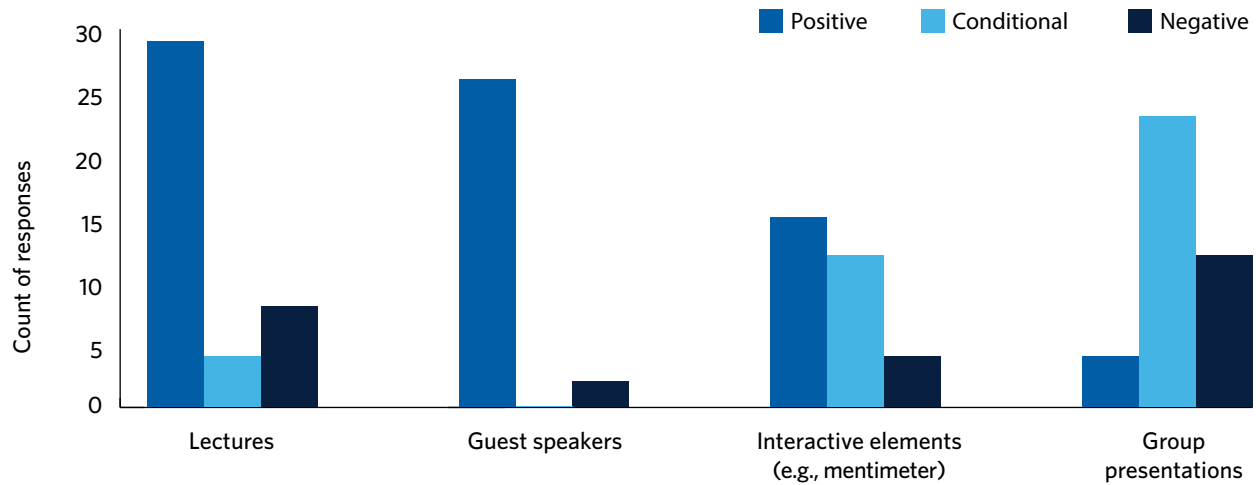


Figure 5: An example of how data related to students' perceptions of interactive elements in courses could be organized in a table

Category	Students' perceptions of interactive elements in courses	Number of student respondents	Percentage of comments
Negative Comments	Not helpful; Prefer traditional lecturing	9	12%
	Students sitting around me won't talk; Lack of interest from peers	8	11%
Conditional Comments	Useful if the interactive element helps students work through challenging questions or misconceptions.	20	27%
	Useful if the instructor explains why they are having students interact.	15	20%
Positive Comments	Great way to keep student engaged	32	43%
	Good for big classes	16	21%

