

ANALYZING QUALITATIVE (TEXTUAL) ASSESSMENT DATA

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Assessment data provide a means to look at student performance in order to offer evidence about student learning in the curriculum, provide information about program strengths and weaknesses, and guide decision-making. Analyzing the data -- in context -- gives meaning to the information collected and is essential in order to appropriately utilize and communicate the assessment results.

Qualitative data consist primarily of words and observations, rather than numbers, and are often useful for answering “why” and “how” questions about student performance, approach, motivation, or experience. Qualitative data can come in many forms and from a variety of sources including responses to open-ended survey questions, focus group notes, interview transcripts, internship supervisor comments, essay responses, and student portfolios. The data can be brief responses (such as an occupation) or longer comments. This resource is intended to help faculty consider good practices and plan for summarizing qualitative data collected about student learning as part of program or course assessment.

ATL is available to work with undergraduate programs to analyze and create visual displays of assessment data to engage faculty in discussions of assessment results; please [contact ATL](#) for additional information.

Note: Some assessment measures, such as surveys, can produce both qualitative (textual) and quantitative (numeric) data. For example, open-ended survey questions generate qualitative data in the form of textual responses. On the other hand, closed-ended (multiple choice) and rating scale survey questions typically generate quantitative data, as the responses produce either numerical data or data that can be put into categories assigned arbitrary values (e.g. Yes/No answers: Yes = 1, No = 0; Agreement Levels: Strongly Agree – 1, Agree – 2, Neutral – 3, Disagree – 4, Strongly Disagree – 5). This resource focuses on strategies for analyzing textual responses (such as those from open-ended survey questions, interview transcripts or focus groups). For more information about analyzing categorical or rating scale data see ATL’s [Analyzing Quantitative \(Numeric\) Assessment Data](#).

Examples of Qualitative Assessment Data

- Open-ended questions and written comments on questionnaires, rubrics, or forms that generate single words, brief phrases, or full paragraphs of text.
- Testimonials that provide reactions to a program in a few words or lengthy comments, either in person or in written correspondence.
- Individual interviews that produce data in the form of notes, a summary of the individual’s interview, or word-for-word transcripts.
- Discussion group or focus group interviews that involve full transcripts and/or notes from a moderator or observer.
- Logs, journals and diaries that provide structured entries or free-flowing text.
- Observations recorded as field notes or descriptive accounts as a result of watching and listening.

Before You Begin: Purpose, Context, Audience

It can be daunting to analyze qualitative data for the first time or in a new context, as there is no “one size fits all” approach, but there are some ways to make it more approachable. It’s best to start thinking about your data analysis plan when you are first identifying your assessment questions and determining how you will collect the needed information, as it is important to match the analysis strategy to the type of information that you have and the kinds of assessment questions that you are trying to answer. In other words, decisions about how to analyze assessment data are guided by what assessment questions are asked, needs of the audience/ stakeholders, as well as the data available and how they were collected. As previously mentioned, qualitative data can be particularly useful for exploring “why” and “how” questions about student performance, approach, motivation, or experience.

Typically, assessment data are intended for discussion and use by program faculty, who are familiar with the discipline, curriculum, and other sources of related, complementary data. When carefully analyzed and interpreted in the context that they were collected, assessment data can offer useful insight into curricular coherence and effectiveness. Data can be misleading, or worse, when they are taken out of context or used for purposes other than originally intended and agreed upon. As a result, you will want to understand the purpose and scope of the project, the assessment questions that guided the project, the context, and the audience for the results before any type of analysis occurs. You should be familiar with the basic data collection processes, including how the data were collected, who participated, and any known limitations of the data, as this can help you make an informed decision about what the data can reasonably reveal. Other factors to consider may include: How was the random sampling/sample size determined? What was the response rate? Has this measure been pilot tested and refined? As a good practice, a short written description of the data collection processes, number of participants, and a copy of any instrument used (i.e. survey or focus group questions) should accompany the data analysis file, data summary, and/or final report.

Examining and Organizing Textual Data

Qualitative data analysis involves the identification, examination, and interpretation of patterns and themes in textual data, and determines how these patterns and themes help answer the questions at hand. There are many different ways to conduct qualitative analysis that vary in fluidity and adherence to set structure. Qualitative data analysis is often an ongoing, fluid, and cyclical process that is highly dependent on the evaluator and the context of the project. It is also likely to change and adapt as the data emerge. Therefore, always keep in mind the kinds of assessment questions that you are trying to answer throughout the analysis process, as it can be easy to become overwhelmed by the vast quantity of data and distracted by all of the details.

Getting to know your data

Understanding your data set and what questions you want to answer are important first steps in qualitative data analysis. In some cases, the qualitative data may focus on a particular area of interest, while other times the area of interest may be interwoven with unrelated textual information. To better understand your data, read and re-read the text. Make notes and jot down overall impressions. These impressions can inform the direction of analysis and contribute to more effective analysis.

For open-ended survey questions, focus group notes, interviews, etc., don’t assume that answers will necessarily follow the questions. Occasionally participants or respondents will provide answers to questions asked earlier, or to questions that have not been asked yet. In these cases, it may be appropriate to move the answer to the appropriate question.

Categorizing or coding your data

Categorizing or coding data is the crux of qualitative analysis. If you have specific questions or concepts to address, then you may be able to start with a list of preset categories. Additional categories can be added to the preset categories, as needed. If you are analyzing for broader questions, you may take a more inductive approach, reading through the text and finding themes that recur in the data. These themes become your codes or categories. As you create categories, provide a descriptive label and note what is and is not included in the category.

When categorizing focus group or interview notes (or open-ended survey questions where there are few responses), it can be useful to simply group like responses together for each question:

<p>2. Is there anything you would change about, or add to your experience in your major?</p> <ul style="list-style-type: none"> • <i>Curriculum:</i> <ul style="list-style-type: none"> ○ There is a lab associated with 347 that goes over NMR and ELISAs. I've had professors that won't go over those topics because they say we should've already had it in 347, but 347 isn't required. They assume we know about these tests, but we don't. ○ There are also time conflicts when you are trying to take certain courses. ○ I needed to take virology in the spring to complete my double degree, but it isn't offered in the spring. ○ Based on the number, it seems like you should take 465 late in your curriculum. But the course relies on calculus and general chemistry, so it would've been easier if I had taken it earlier. ○ In 413 and 414 you learn a lot of the same stuff. • <i>Scientific Writing:</i> <ul style="list-style-type: none"> ○ I was unprepared to read literature for 494. The sheer volume of it. (<i>general agreement</i>) There should be a 200-level course that works on reading literature. ○ You have to read three papers a week to help understand them. ○ Maybe you could bypass that if you are doing lab research. I was part of a lab and I was already reading a paper a week for the lab. ○ More writing. Well not actually more writing, more teaching about writing. • <i>Lab Courses:</i> <ul style="list-style-type: none"> ○ In lab courses we repeat experiments that were developed in the 1950s. They could put modern literature in the labs and then we could go over experimental designs. ○ Or assay building. ○ I like the idea of putting modern literature in the labs. We already know the results of the experiments we are doing now. We should take current research and critically analyze the methods or see if you can replicate it.
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Re-reading the text facilitates accurate coding. Your initial list of categories may change and in some cases, you may combine two similar categories. Other times, you may need to split one category into several subcategories to accommodate the data. You may also have to adjust category definitions. Although you will want to create an exhaustive list of categories, sometimes sections of text will fit into more than one category (as in the example below). As a result, it is useful to find a system for cross-indexing (such as using spreadsheet software).

The following is another example of coding open-ended responses to a survey question:

	A	B	C	D	E	F	G
1	Student	Q5 - Strengths					
2		Code: Electives	Code: Flexibility	Code: Advisors	Code: Professors	Code: No Response	Text
3	1	1	1				The Science program has a lot of flexibility; there were many electives.
4	2	1	1				The program is very flexible and allowed me to take the electives I wanted.
5	3	1					There are lots of options for electives.
6	4			1			The advisors are great!!
7	5					1	
8	6			1	1		Advising. Great professors.

Making Meaning: Interpreting and Reporting Results

As you categorize and code your data, overall themes and patterns will begin to emerge. Once you have identified categories and themes, you can begin the process of making meaning across cases. Moving from understanding how one person responded to identifying issues and themes across many people's responses is critical to understanding the group as a whole.

Descriptive summaries

It can be useful to write a descriptive summary for each of the questions (and look across questions for themes that cut across multiple questions, i.e. are there things that repeatedly come up?) It is often useful to select and include quotes that capture the essence of what was said (and give the reader an idea of how the participants talked). Take care to protect confidentiality when reporting or sharing qualitative data with others. For example, names--including student, faculty, and staff--and other identifying information should be removed from any comments that will be included in a report or otherwise shared.

The following is an example of a descriptive summary for a focus group question:

Student Comments on Breadth vs. Depth of Curriculum
May 2016 Student Focus Group Results (12 students)

The following is the facilitator's interpretation of themes that emerged in the focus group discussion:

- When asked for a preference between digging deeper into a limited number of subjects versus more integration of information from different areas, students agreed they prefer a "broad" approach, explaining, for example, "*if you go into research, you need to have a basic understanding in all these things,*" and "*for someone going into the medical field, it's important to know a little about everything.*"

Themes and relative importance

You may also be interested in the relative importance of different themes. In qualitative research, some controversy exists over the practice of counts of comments for the number of times a certain category is used, but for some assessment purposes the practice can be useful. When analyzing open-ended survey responses, for example, simple counts of how many times a certain category is used, while not suited for statistical analyses, can provide a rough estimate of the relative importance of that category or theme. On the other hand, numbers can be particularly misleading in reporting focus group results as readers often want to turn numbers into percentages and extrapolate the results to reflect their entire population. However, the sample size for most focus groups is typically too small to allow statistically significant generalization of results to a larger population (for more information, see ATL's [Quick Guide to Sample Sizes, Sampling & Representation for Program Assessment](#)).

When interpreting counts of comments, it is a mistake to assume that what is said most frequently is most important. Some participants may comment three separate times on one issue and others may not comment at all. Sometimes a really key insight is said only once. When reporting these infrequent but valuable results, it is important to convey that it was infrequent and provide a rationale for why you chose to include it in the report.

Theme/category counts with representative quotes can be presented in a table (such as the following example). Again, including quotes to represent your various categories can be a useful way to report results, but take care to protect confidentiality when reporting or sharing qualitative data with others.

For example, names--including student, faculty, and staff--and other identifying information should be removed from any comments that will be included in a report or otherwise shared.

The following is another display, using a table with counts of comments and representative quotes:

Student Comments on Program Strengths 2016 Senior Exit Survey (50 students)		
Categories	# of Comments	Selected Examples
Hands-on Learning	24	"The labs helped to put into practice what I learned in class"
		"The required internship is where I learned the most"
Faculty	22	"Most of the instructors were top-notch, really well-known in the field"
		"Most of my professors were so passionate about what they taught"
Real-world Skills	18	"They tried to give us skills we can apply in the real world"
		"It wasn't just theory"
Other	5	"There was great networking"

Note: Will not sum to 50 because some students indicated multiple strengths. Categories were assigned based on recurring themes in the responses.

Connections between categories

Identifying connections between categories is also important, because these relationships can help explain why something occurs. *How do these categories relate? What data supports your interpretation? Are there other factors that could contribute?* You may discover that two or more themes occur together consistently in the data – wherever you find one, you find the other.

Tables can be a useful way to present connections between categories:

Student Comments on Program Strengths Organized by Future Career Plans 2016 Senior Exit Survey (50 students)				
Future Career Plans				
	Private Business/ Industry (18 students)	Faculty/Academic Research (14 students)	Teaching, K-12 (11 students)	Government/Non- academic Research (7 students)
Program Strengths	Real-world Skills (14 comments)	Research Opportunities (12 comments)	Hands-on Learning (4 comments)	Hands-on Learning (5 comments)
	Hands-on Learning (10 comments)	Faculty (8 comments)	Sense of Community (4 comments)	Research Opportunities (4 comments)
	Industry Connections (8 comments)	Hands-on Learning (4 comments)		

Note: Will not sum to 50 because some students indicated multiple strengths. Categories were assigned based on recurring themes in the responses.

Using Words Clouds in Qualitative Data Analysis

A word cloud displays key words from selection of text in different sizes based on their frequencies (i.e. words that appear more often in the source text are displayed larger in the word cloud). A variety of word cloud generators are freely available on the internet and the process for creating them is relatively quick and straightforward. Evaluators can simply import text (for example, a set of interviews) into a text box and the tool creates a graphical representation of the words.

