Domain Analysis

Domain Analysis Worksheet

Semantic Relationship: *Strict Inclusion*
Form: X (is a kind of) Y
Example: An oak (is a kind of) tree
—————————————————-
Included terms Semantic Cover
Relationship Term

Summarizer (76) Predictor (76)
Clarifier (76) Question-asker (76)
Connector (76) Teacher (76) is a kind of *Student role*
Writer (82) *Language appreciator (76)*
Meaning maker(84) Discusser (79)
Thinker (82) Reluctant reader (80)
Activity chooser (79) Listener (82)

Taxonomic analysis

Once a focus on one or a few related domains has been selected and focused inquiries have been conducted to expand and clarify the included terms in those specific domains, taxonomic analysis is used to discover if and how the included terms are systematically organized or related within a domain (or how several domains are related within a larger covering domain). This analysis activity creates a "taxonomy" which summarizes the relationships among all the included terms inside a given domain. It reveals subsets of the domain and the ways they are related to the whole domain. It may also reveal multiple levels of subsets (subsets of included terms).

Although experienced qualitative inquirers are likely to conduct taxonomic analysis as an extension of domain analysis in a single process, by following the steps presented below, the beginning inquirer can develop these skills systematically.

Step 1. Select a domain for taxonomic analysis

This should be one of the domains you selected in previous assignments for domain analysis and focused inquiry. It should also be one of the domains for which you have the most information, although you will probably discover even more included terms for the domain during the taxonomic analysis. For the sake of the example begun above, we will continue to use the domain cover term: Student roles.

Step 2. Look for similarities based on the same semantic relationship used in the domain

This involves looking at the included terms in the selected domain to see if any of them are similar enough that they can be grouped together as items in a subset of a more inclusive term. For example, the seven original roles identified on page 76 are all similar in the sense that they were *assigned* to the students as part of the "reciprocal reading" activity in which the class was engaged. In the taxonomy, they could be organized under subset term, "teacher assigned roles." In addition, several of the other terms reflect expectations Dave had for the students in comments he made to them while conducting the class. Terms such as writer, meaning maker, thinker, discusser, and listener could be organized under the subset term, "teacher expected roles." The included term, "activity chooser" reflects the students' spontaneous response when Dave asked if they want to move to discussion or continue listening to him read. This term seems to be unique among the terms identified so far; but other related terms may be identified as the analysis continues and they could be grouped under the subset term, "spontaneous roles." The term "reluctant reader" is a term Rob uses to categorize several of the students he has seen in Dave's classes. It isn't so much a classroom role as a more permanent personality role. Other personality roles may show up and they could be grouped with this one using the subset term, "Personality roles."

Step 3. Look for additional included terms

This step is almost identical to one used during focused inquiry. Structural questions were applied there to identify as many included terms for a given domain as possible. In **this** step, structural questions are asked *for each included* term to discover additional included terms, which are subsets of the first level of included terms. For example, the first level included term "reluctant reader" actually consists of four subset terms according to the information on page 80 of Rob's story. The structural question "What are all the kinds of reluctant readers?" could be used in this step to expand the list of included terms under that category to include: a. those who read well but don't read, b. those who read poorly and don't read, c. those who read well and do read, and d. those who read poorly but do read.

Step 4. Search for larger, more inclusive domains that might include as a subset the domain you are analyzing

This step involves expansion rather than focus; yet it reveals meaning by searching for relationships between the domain you have selected for focus and other domains. It consists of asking a structural question in reverse: Is this domain a subset of something else? For example, for the domain "Student roles," you might ask, "Is the student roles domain a kind of something else?" A possible answer might be "classroom participant roles" which include the teacher's roles, the graduate student's roles, and so on. In turn, all these roles might be considered part of an even more inclusive "super domain" such as "learner roles." Combined with the subsets discovered in step three above, the inclusive domains identified here can form part of a large organizational understanding of the relationships among the meanings participants in this setting assign to their experiences.

Step 5. Construct a tentative taxonomy

The taxonomy consists of a graphic representation of the relationships among the domains and their subsets of included terms at all identified levels. The tentative taxonomy coming from the analysis of Rob's story discussed in steps 1-4 above might look something like this:

Learner roles

1. Teacher roles
2. Graduate student roles
3. Student roles
    1. teacher assigned roles; reciprocal reading activity roles
        1. Summarizer
        2. Predictor
        3. Clarifier
        4. Question-asker
        5. Connector
        6. Teacher
        7. Language appreciator
    2. teacher expected roles
        1. writer
        2. meaning maker
        3. thinker
        4. discusser
        5. listener
    3. spontaneous roles
        1. activity chooser
    4. personality roles
        1. reluctant reader roles
            1. those who read well but don't read
            2. those who read poorly and don't read
            3. those who read well and do read
            4. those who read poorly but do read

Step 6. Make focused inquiries to check out the adequacy of your analysis

Of course, doing the taxonomic analysis described above will raise new questions about the social situation you are studying because you will be trying to find relationships you never even thought about before. So during the analysis steps, plan to return to the field (or at least to your full set of field notes) several times to collect more information (e.g., are there other kinds of "student roles" that you missed during earlier observations? What should be included in the "spontaneous roles" included term which you just discovered besides "activity chooser"? What other "personality roles" are there besides these "reluctant reader" roles? What other "teacher expected roles" are there?). As a result of searching for answers to these questions in this step, the taxonomy will be expanded into the form discussed in the next step. These kinds of focused questions are at the heart of Spradley's process for "reading" the experiences of participants and the discovery of their interpretive stances.

Step 7. Construct a completed taxonomy

Actually, all taxonomies are only approximations of the reality you study. So there is really no such thing as a "complete" taxonomy. However, when you have repeated steps 1-6 a few times for a few selected domains and no longer discover new included terms or relations between terms or between domains, it is time to complete this analysis stage by formalizing the taxonomy using any of several types of figures and a written explanation for the figure. For example, the outline form used below may not seem as helpful to you as a more graphic figure that includes Venn diagrams, or at least lines connecting the various parts of the taxonomy. Feel free to draw pictures, create matrices, or do whatever works for you to capture the summary of your developing taxonomy. All of this analysis information should be appropriately summarized in your field notes and referenced in your audit trail too. Although the following is not a

"complete" taxonomy, it is presented to illustrate how the use of focused inquiry and structural questions in step 6 can expand the tentative taxonomy presented in step 5. Page numbers for terms taken from the text are in parentheses.

Learner roles

1. Teacher roles
2. Graduate student roles
3. Student roles

1. teacher assigned roles; reciprocal reading activity roles (all in this subset are from page 76)
    1. Summarizer
        1. retell what happens in a story
    2. Predictor
        1. thinks about what might happen next
        2. thinks about what might have happened if a character had acted differently
    3. Clarifier
        1. answers questions posed by the question-asker
        2. guesses at answers to questions posed by the question-asker
    4. Question-asker
        1. asks questions in regards to the text being read
        2. asks questions about things that are not clear in the text
        3. asks questions that would help explicate the text
            1. like wondering why someone did a certain thing
    5. Connector
        1. makes connections between the reading and his/her own life
    6. Teacher
        1. calls on the other students in their various roles
        2. records the other students' participation
    7. Language appreciator
        1. notes any particularly noteworthy uses of language in the text
        2. explains these noteworthy uses of language
2. Switch roles regularly (p78)
3. broaden horizons in responding to literature (p78)
4. Alternative roles being considered (p79)
5. small group membership (p79)
    1. reader in a small group (p79)
    2. chorus reader (p79)
    3. discusser (p79)
6. teacher expected roles
    1. writer (p82)
        1. take notes about readings (p78)
            1. to get help in new assigned roles (p78)
        2. think on paper (p78)
    2. meaning maker (p84)
        1. responding to teacher's questions about what words "mean" (p84)
            1. considering what the teacher says a word does not mean (p84)
            2. thinking of a substitute word (p84)
    3. thinker (p82)
        1. on paper (p78)
        2. thinking of a substitute word (p84)
        3. about the literature the teacher is going to read (p82)
    4. discusser (p79)
        1. of a particular reading (p79)
    5. listener (p82)
        1. to the literature the teacher is going to read (82)
7. spontaneous roles
    1. activity chooser (p79)
8. personality roles

1. reluctant reader roles (p80)
    1. those who read well but don't read
    2. those who read poorly and don't read
    3. those who read well and do read
    4. those who read poorly but do read

Selected inquiry. Data collection and analysis activities discussed earlier (descriptive observations, domain analysis, focused inquiries, taxonomic analysis) summarized ways to understand a social setting holistically while focusing on certain dimensions for deeper understanding. This section of the chapter discusses how selected inquiry is used to deepen that focus even more through the asking of **contrast** questions. **Descriptive questions** provide guidance for conducting a general descriptive overview of domains within a study. **Structural questions** guide inquiry into the relationships among included terms within domains selected for focused attention. And **contrast questions** guide inquiry into the similarities and differences that exist among the terms in each domain (at all levels– not just among the first level included terms under a given domain cover term but also among the subsets of included terms within included terms, as will be demonstrated below. Understanding participants' meanings requires all three types of information: holistic descriptions, clarified relationships among the parts, and clarified similarities and differences between the parts within domains.

Contrast questions ask, "How are all these things similar to and different from each other?" The answers to these questions constitute **dimensions of contrast** which reveal facets of participants' interpretive stance and meanings and provide a basis for asking more contrast questions during reviews of field notes or while conducting more selected inquiries. Asking and answering these questions nearly always helps the researcher see that there is much more information to collect from the field.

Spradley identifies three basic types of contrast questions, which yield dimensions of contrast:

a. **Dyadic contrast questions** which compare two members (included terms or subsets of terms within included terms) of a single domain by asking, "In what ways are these two things similar and different?" For example, in the domain "Student roles," one might ask, "What are the differences between the included terms 'teacher assigned roles' and 'teacher expected roles'?" There are several possible answers to this question, which constitute possible dimensions of contrast for interpreting students' experiences.

For example, while the two terms are obviously similar in the sense that the expectations *and* the assignments come from the teacher to the students, the teacher assigned roles are *temporary* while teacher expected roles are *permanent*. Also, teacher assigned roles apply to *specific students* in those particular roles while teacher expected roles are expected of *all students*. Another dimension of contrast that is revealed by asking this contrast question is the fact that students can be held *immediately accountable* for filling their assigned roles while they may or *may not ever be held accountable* by the teacher for filling the expected roles. Many other dimensions of contrast could be added to these three by continuing to ask this dyadic contrast question regarding these two included terms.

b. **Triadic contrast questions** in which the researcher looks at three included terms within a domain at once (or among subsets of included terms) and asks, "Which two are most alike in some way, but different from the third?" By asking this contrast question many times about all the terms previously identified in a domain (and even among domains within a super domain), the inquirer can discover both similarities and differences at the same time.

For example, one of the included terms in the domain of student roles is "teacher expected roles." Within that included term, one of the roles is "thinker." Within *that* role, three kinds of thinking were identified in Rob's story: 1) thinking on paper, 2) thinking of a substitute word, and 3) thinking about the literature the teacher is going to read. By asking the triadic contrast question, "Which two of these kinds of thinking are most alike in some way, but different from the third?" you might come up with dimensions of contrast such as: 1. the use of paper versus thinking in one's head (identified by noting that the first way of thinking is different from the second two on this dimension), or 2. thinking about a specific issue versus thinking generally (identified by noting that the second kind of thinking– about a specific word, is different

from the first and third kinds of thinking, on this dimension). These similarities and differences reveal some of the characteristics of thinking and the meaning behind students' behaviors and the teacher's expectations.

c. **Card-sorting contrast questions** allow the informant or the inquirer to compare *all* the identified terms (included terms and their subset terms) of a large domain to each other to identify differences and similarities. Each term is written on a card and then the person asking the contrast questions reads through the cards asking themselves, "Are there any differences among these things?" If the items do not seem different in any way, they are placed in a single pile. When the person doing the sorting comes to the first item that appears different for any reason at all, they place that card in a new pile. Now with two piles, the sorter continues to sort the cards until they find one that does not fit in either of the piles; then they start a third pile, and so on until all the cards are sorted into piles. All the items within a pile are considered to be similar. Cards in different piles contrast with one another. The piles constitute dimensions of contrast, which the inquirer attempts to name and describe. Illustrating this use of contrast questions here is too complex; but you should try it with your own project.

It is possible that even after searching your field notes using contrast questions, you will not identify any dimensions of contrast. However, it is likely that you will have identified domains and categories of included terms within those domains. By returning to the field and using selective observations and interviews, you should begin to identify those differences. Once you have discovered one or two differences, you may still need to discover more; continued use of contrast questions while reviewing field notes and during selective inquiry should help you do this. Once you have discovered a dimension of contrast that applies to two or more terms in a domain, you may still want to find out if it applies to the other members of that domain. Again, this may involve more selected observations and interviews in addition to reviewing field notes with these contrast questions in mind.

Steps for Making Selected Inquiries

The following steps should guide you in making selected inquiries:

Step 1. Select one or more domains of interest from among those already used for focused observations and taxonomic analysis.

For the example used so far, that is the domain of "student roles."

Step 2. While reviewing the elements of the selected domain(s), write out several contrast questions (dyadic and triadic) which juxtapose those elements

For example, "What are the differences between the included terms 'teacher assigned roles' and 'teacher expected roles'?" or "Which two of these kinds of thinking are most alike in some way, but different from the third?" were contrast questions illustrated earlier.

Step 3.Review your field notes, asking the many contrast questions you have identified and writing your tentative answers into another section of the field notes.

Again, the example of tentative answers to these questions given above is illustrative.

Step 4. Write each of the terms in the domain on separate cards or sheets of paper and conduct a card-sorting contrast exercise, again writing the results of this analysis into your field notes.

Step 5. Return to the field setting in which you are conducting your study and conduct selective inquiries to answer any of the contrast questions you could not answer with field notes you already had collected. Look for additional differences among domain terms.

Componential analysis

Previous chapters and sections of this chapter have discussed several ways to gather and organize data during a qualitative study. Domain analysis helps researchers discover patterns in the descriptive detail of field notes; taxonomic analysis organizes elements in domains into cohesive structures, which are revealed through focused inquiries. Selective inquiries take another step by identifying contrasts and similarities among elements in the domains. This section of the chapter introduces componential analysis as a way to organize and represent these newly discovered contrasts to help you as an inquirer take a better "reading" of the experiences of people in your inquiry setting and the interpretations and meanings they associate with their experiences.

People's interpretations and meanings are associated with domains, included terms, dimensions of contrast, taxonomies, etc. because these analytic categories help the inquirer distinguish among examples from various categories. For example, clarifying the differences between teacher assigned and teacher expected student roles helps the inquirer understand the experiences of both the students and the teacher in that setting much better. How the students respond to those roles will make more sense to the inquirer with this understanding.

Componential analysis includes the entire process of searching for dimensions of contrast as described above, entering this information into a chart Spradley calls a **paradigm chart** and then verifying the accuracy of these analyses through further data gathering in the field. The paradigm chart organizes the categories of a domain with their attributes displayed across several dimensions of contrast as illustrated in figures below (adapted from Spradley):

Features of a paradigm chart

Domain name Dimensions of Contrast and categories: I II III

Domain or included term Attribute 1 Attribute 2 Attribute 3
Domain or included term Attribute 1 Attribute 2 Attribute 3

Domain or included term Attribute 1 Attribute 2 Attribute 3
Etc.

In a paradigm chart, the items in the rows associated with a given domain or included term are the attributes associated with that category. The columns represent the dimensions along which the attributes of the categories contrast with one another. This tool can be used to analyze any domains discovered in a qualitative study.

There are eight basic steps doing a componential analysis:

Step 1. Select a domain for analysis

This may consist of any domain for which you have conducted selective inquiry and for which you have some identified contrasts. However, Spradley recommends that to learn to use componential analysis, one ought to start with a domain consisting of fewer than ten included terms. As before, the domain used for illustration here is "student roles."

Step 2. Inventory all contrasts previously discovered

During earlier analysis and through the use of contrast questions and selective inquiries, many statements of contrasts and dimensions of contrast should have been recorded in your field notes. Spradley suggests each of these statements, for the selected domain, be written onto separate sheets of paper to compile a list of contrasts. This could also be done very efficiently with a computer word processing program. Examples from Rob's study include:

1. Teacher assigned roles are *temporary* while teacher expected roles are *permanent* (a dyadic contrast).
2. Teacher assigned roles apply to *specific students* in those particular roles while teacher expected roles are expected of *all students* (a dyadic contrast).
3. Students can be held *immediately accountable* for filling their assigned roles while they may or *may not ever be held accountable* by the teacher for filling the expected roles (a dyadic contrast).
4. Student thinking roles vary in whether they use paper and writing versus thinking in their head (a triadic contrast)
5. Student thinking roles vary in whether they are thinking about a specific issue versus thinking generally (a triadic contrast).

Step 3. Prepare a paradigm worksheet

A paradigm worksheet is a large sheet of paper (or computer spread sheet) with an empty paradigm chart, except for the domain categories, which are listed down the left hand column as shown in the Figure below.

Domain Categories: Dimensions of Contrast
"Student Roles" I II III IV
1. teacher assigned roles
a. reciprocal reading activity roles

1. Summarizer
   a) retell what happens in a story
2. Predictor
   a) thinks about what might happen next
   b) thinks about what might have happened if a character had acted differently
3. Clarifier
   a) answers questions posed by the question-asker
   b) guesses at answers to questions posed by the question-asker
4. Question-asker
   a) asks questions in regards to the text being read
   b) asks questions about things that are not clear in the text
   c) asks questions that would help explicate the text
   (1) like wondering why someone did a certain thing
5. Connector
   a) makes connections between the reading and his/her own life
6. Teacher
   a) calls on the other students in their various roles
   b) records the other students' participation
7. Language appreciator
   a) notes any particularly noteworthy uses of language in the text
   b) explains these noteworthy uses of language

b. Switch roles regularly (p78)

- broaden horizons in responding to literature (p78)

c. Alternative roles being considered (p79)

1. small group membership (p79)
    a) reader in a small group (p79)
    b) chorus reader (p79)
    c) discusser (p79)

2. teacher expected roles
a. writer (p82)

   1. take notes about readings (p78)
       a) to get help in new assigned roles
   2. think on paper (p78)

b. meaning maker (p84)

   3. responding to teacher's questions about what words "mean" (p84)
       a) considering what the teacher says a word does not mean (p84)
       b) thinking of a substitute word (p84)

c. thinker (p82)

   4. on paper (p78)
   5. thinking of a substitute word (p84)
   6. about the literature the teacher is going to read (p82)

d. discusser (p79)

   7. of a particular reading (p79)

e. listener (p82)

   8. to the literature the teacher is going to read (82)

3. spontaneous roles
a. activity chooser (p79)
4. personality roles
a. reluctant reader roles (p80)

   1. those who read well but don't read
   2. those who read poorly and don't read
   3. those who read well and do read
   4. those who read poorly but do read

Step 4. Identify dimensions of contrast that have binary values

A simple way to identify dimensions of contrast for the columns in the paradigm worksheet is to use dichotomies or binary values. For each category, the contrasts identified in step 2 can be restated so the category is either characterized by that contrast or it is not. For example, either a student role is permanent or it is not. Likewise, students may be held accountable for filling a role or not. The worksheet presented in step 3 is expanded during this step to include a variety of dimensions of contrast with "yes" or "no" in the intersecting cells as shown in the Figure below. Question marks (?) are inserted if more information is needed or a simple yes or no is overly simplistic (a shorter set of domain categories is used to save space):

Domain Categories: Dimensions of Contrast
"Student Roles" Permanent? Temporary? Accountable?
1. teacher assigned roles N Y Y

a. reciprocal reading activity roles N Y Y

b. Switch roles regularly (p78) N Y Y

c. Alternative roles being considered (p79) N Y ?

2. teacher expected roles Y N ?

a. writer (p82) Y N Y

b. meaning maker (p84) Y N N

c. thinker (p82) Y N ?

    1. on paper (p78) Y N Y

    2. thinking of a substitute word (p84) N Y N

3. spontaneous roles N Y N

Step 5. Combine closely related dimensions of contrast into ones that have multiple values

Step four was a simple way to begin identifying dimensions of contrast and to classify domain category attributes. However, binary dimensions of contrast can almost always be combined because they are usually related. This combination allows many more dimensions of contrast to be added to the growing paradigm worksheet. The simpler example presented in step four would be modified to look something like the paradigm worksheet in the Figure below:

Domain Categories: Dimensions of Contrast
"Student Roles" Permanence of Role? Accountable?

1. teacher assigned roles Temporary Y

a. reciprocal reading activity roles Temporary Y

b. Switch roles regularly (p78) Temporary Y

c. Alternative roles being considered (p79) Temporary ?

2. teacher expected roles Permanent ?

a. writer (p82) Permanent Y

b. meaning maker (p84) Permanent N

c. thinker (p82) Permanent ?

    1. on paper (p78) Permanent Y

    2. thinking of a substitute word (p84) Temporary N

3. spontaneous roles Temporary N

Step 6. Prepare contrast questions for missing attributes

Paradigm worksheets quickly reveal the kinds of information one still needs to collect by graphically displaying incomplete dimensions of contrast (showing you which domain categories have incomplete attribute descriptions!. Although the example presented above is fairly simple and all the cells are filled, it would be helpful to get more information about the cells with question marks still in them. Contrast questions could be identified to guide additional data gathering as described in step seven below. For example, one might ask, "Are there some student roles being considered for which students would be accountable and others for which they would not?" Or "What are the circumstances under which students would be accountable?"

Step 7. Conduct selective inquiries to discover missing information

As suggested in step six, the paradigm worksheet should identify areas for further fieldwork to answer the additional contrast questions. Spradley warns that few studies will answer all questions; however, the researcher will have a much more complete understanding of the domain he or she is studying by following this process, even if it is not complete.

Step 8. Prepare a "complete" paradigm

After returning to the field and revising the paradigm worksheet with new information as many times as the project requires (the researcher must decide how often this will be in terms of inquiry objectives, resources, and so on), a final paradigm chart is generated for each selected focus domain. Such charts can be presented in the final report with discussion of selected attributes and relationships. For example, the evolving chart illustrated above might now look like this (again, only showing part of the entire chart given space limitations):

Domain Categories: Dimensions of Contrast
"Student Roles" Permanence of Role? Accountable?

1. teacher assigned roles Temporary Y
a. reciprocal reading activity roles Temporary Y
b. Switch roles regularly (p78) Temporary Y
c. Alternative roles being considered (p79) Temporary N
2. teacher expected roles Permanent Variably
a. writer (p82) Permanent Y
b. meaning maker (p84) Permanent N
c. thinker (p82) Permanent Both

    1. on paper (p78) Permanent Y
    2. thinking of a substitute word (p84) Temporary N

3. spontaneous roles Temporary N

Synthesis

In addition to these "analytic" approaches to discovering the interpretive stances of the people you study, Spradley and others suggest that you can look across your field notes for broad themes. Spradley identifies several possible "universal themes" to consider; but these are couched in terms of theories and constructs used by anthropologists. Rather than restrict yourself to his categories, you should stand back from your analysis and think about synthesizing your experiences from time to time in your own words and concepts or in the words of the students, staff, and others you are working with in your inquiry. Look for patterns that speak for themselves. You may think there is too much detail to ever pull it all together. Perhaps you should only pull parts of it together. But let these patterns emerge from the experiences you have had and that you have documented from the lives of others.

In addition to these "skimming of the cream" kinds of syntheses which don't dwell on the details, you should draw upon the results of the various forms of analysis to "tell a story" of your readings of the stories people in your study have told you. This will be the focus of Chapter 9.

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