

Qualitative research tools and data analysis

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Lecture Objectives

In this lecture, students will

- be introduced to qualitative tools
- be introduced to the process of qualitative data analysis

1. Qualitative data collection methods


The main methods are:

- interview,
- focus group,
- observation,
- collection of documents such as diaries, photographs, collection of narrative, journals,
- the think aloud method and
- open questionnaires.

1.2 Interviews

There are three main kinds of interviews:


- **The structured interview** is one in which the content and the procedures are organized in advance.
- This means that the sequence and wording of the questions are determined by means of a schedule and the interviewer is left little freedom to make modifications.
- It is characterize by being closed.
- This kind of interview is used in situation where a written questionnaire would in theory be adequate except that for some reason the written format is not feasible (for example, because of the low level of literacy amongst the participants or the need to tighten control as in some market surveys or opinion poll) (DÖrneiy, 2007: 135).

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The semi-structured interview

- **The semi-structured interview** is the most **common qualitative** data gathering tool during which the person being interviewed is the expert and the interviewer the student.
- This kind of interview involves a number of open ended questions based on the topic areas that the researcher wants to cover. The open ended nature of questions posed defines the topic under investigation but provides opportunities for both interviewer and interviewee to discuss some topics in detail.
- If the interviewee has difficulty answering a question or provides only a brief response, the interviewer can use cues or prompts to encourage the interviewee to consider the question further.

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- A good interviewer needs to be able to put the interviewee at ease, needs good listening skills and needs to be able to manage an interview situation so as to collect data which truly reflect the opinions and feelings of the interviewee concerning the chosen topic.



The unstructured interview


- **The unstructured interview** is an open situation having greater flexibility and freedom.
- It is similar to a free flowing conversation. Not detailed interview guide is prepared in advance, although the researcher usually thinks of a few (1-6) opening questions.
- During the interview, the researcher may ask an occasional question for clarification and may give reinforcement feedback, but interruption are kept to the minimum (Dorneiy, 2007: 136).
- For an unstructured interview to be successful, the interviewer needs to establish good rapport with the interviewee.

1.2.1. Preparing for the Interview and designing the interview guide

- The complete interview process involves a series of carefully designed steps after having chosen the sample.
- The preparation of an interview guide containing a few relevant questions is necessary.
- A good interview guide requires careful planning followed by piloting (Dorneiy, 2007, p. 136).

1.2.2. Question Types

- The first few questions can be **factual questions** (family, job) to set the tone and create initial rapport.
- **Content questions:** experiences and behaviours, opinions and values, feelings, knowledge, sensory information (what has someone seen, heard...), background or demographic information.
- These categories concern different aspects of the participants overall view/ experience of the phenomenon and then we can get a rounded picture by including in our interview guiding questions that tap into each dimensions.

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- **Probes** may include detailed oriented and clarification questions to increase the richness and depth of the responses.
 - The final **closing questions**. This permits the researcher to have a final say. Simple questions such as ‘Is there anything you like to add’ or ‘What should I have asked you that I didn’t ask you?’

1.2.3. Recording the interview

Some key issues of interview conduct are helpful such as:

- Recording the interview
- Starting the interview (the first few minutes are important to set the tone/ climate of the interview).
- We must show that we are really interested in what the interviewee has got to say and that we are a nice and reasonable and non-threatening person.
- Before starting the recording, we need to explain again the purpose for the interview.



1.2.4. Conducting the interview

- A good qualitative interview has two features:
 - a) It flows with the various parts connecting seamlessly.
- We must remember that we are there to listen (not to speak).
- B) It is rich in detail; it is an area where the skilful use of various probes can make a real difference.



1.3. Focus Groups

Focus groups - as the name suggests- involve a group format whereby the researcher records the responses of a small group (usually 6-12 members). The focus group is based on the collective experience of brainstorming, that is, participants thinking together, inspiring and challenging each other, and reacting to the emerging issues (Dorneiy, 2007: 144).




1.4. Observation


- The distinctive feature of observation as a research process is that it offers an investigator the opportunity to gather ‘live’ data from naturally occurring social situations.
- Observation, too, can be structured, semi-structured or unstructured.
- The structured observation is useful for testing hypotheses while the semi-structured and unstructured provide a rich description of a situation which, in turn, can lead to subsequent generation of data.


1.4.1. Classroom Observation

To organize the many different ways in which we can observe classrooms, two dichotomies are usually offered :

- ‘**structured** versus **unstructured**’. These are very similar to **quantitative** and **qualitative** distinction in observation terms.

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- The first one is highly structured and involves going to the class with a specific focus and with concrete observation categories,
 - whereas the unstructured is less clear; the researcher needs to observe first what is taking place before deciding on its significance for research.

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- The former involves completing an observation scheme,
 - while the latter involves completing narrative field notes, often supplemented by maps or diagrams (*Dorneiy, 2007, p. 179*).

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- Schemes – similar to questionnaires- have a range of systematic categories which allow the observer to record events quickly by using tally marks (*Dorneiy*, p. 180). Schemes also need to be piloted

Section E: How Materials are Used (Cittravelu, 1995)

QUALITY	CHARACTERISTICS	Yes	No	Notes
Control amount of help given	Models used but not for all students			
	Notes (language and ideas help)			
	Substitution tables			
	Stimuli like pictures, maps, tables, diagrams, etc			
Control Interactional mode	Allow good students to work on their own			
	Organize groups			
	Harder tasks to better students			
	Organize mixed ability interaction			
Give different targets of achievements	Provides model based on their proficiency			
Use a Variety of Approaches	Process of writing emphasized (Plan, Drafting, Editing)			
Evaluate according to individual capability and progress	Evaluate according to how much progress made			
	Provide suggestions			

Table 2: Checklists for Writing Classroom Observation (Noor Hanim, 2011, Appendix B, pp65-66)

Diagnostic Checklist of Silent Reading

Student _____ Teacher _____
 Grade Level of Passage _____ Date _____

Silent Reading	Observations			Comments
	1	2	3	
1. Points to individual words				
2. Runs a finger under each line				
3. Runs a finger down the page				
4. Whispers words				
5. Says words aloud				
6. Moves head while reading				
7. Holds book too close				
8. Holds book too far away				
9. Reads too slowly				
10. Reads too quickly				
11. Other notable behaviors (specify)				

St. Edward's University Observation Rubric

Observer's Name: *K. Kelling*

School: *Del Valle HS*

Student's Name: *Lorraine McKay*

Subject/Grade: *Art I*

Date: *March 7, 2011*

9:25-

Quality	Indicators	Exceeds Standard	Meets Standard	Approach Standards	More work to be done	Comments: Please be specific with feedback
Active and Successful Participation	<ul style="list-style-type: none"> - Student background integrated in lesson to promote active and engaged lesson - problem solving/critical thinking skills promoted in students - Lesson designed to promote attention and interest from students 		✓			<ul style="list-style-type: none"> • Students begin the period by copying new vocabulary. Students might benefit from a specific number of minutes for copying or copying in increments as you explain a topic. • What questions would help you determine prior learning? • What strategies will help students master vocabulary? Try Marygrove's • Effective positive reinforcement • You have a gentle manner that is largely working for you, but keep in your awareness that these are high school students. You sometimes talk to them as if they are younger than they are.
Learner-Centered Instruction	<ul style="list-style-type: none"> - Attempts learner-centered instruction through motivational instruction, pacing and technology that cognitively engages all students - Communicates clearly through a variety of forms - Uses questioning and assessment to enhance student participation and learning 			✓		
Evaluation and Feedback	<ul style="list-style-type: none"> - Provides constructive feedback to students - carefully aligns objectives, assessments and activity - Uses both formative and summative assessments 		✓			
Classroom Environment	<ul style="list-style-type: none"> - Creates rapport and manages student behavior in an atmosphere of respect - Positive attitude towards students and subject matter is evident - Effectively manages time and materials to enhance learning - Manages classroom procedures to maximize time for student learning - Establishes or enforces previous standards for behavior that foster a culture of learning in the classroom 		✓			
Content Background	<ul style="list-style-type: none"> - exhibits mastery of content area and effectively guides students to deeper understanding of topic through meaningful instructional activities 	✓				

intro list perspective

Name _____

Informational Writing Checklist

Elements	Expectations	Self Check	Buddy Check	Teacher Check
Introduction	<ul style="list-style-type: none">• I have a thesis statement that gives the main idea of my writing.• I have 1-3 sentences that give information about my topic.			
Body Paragraphs	<ul style="list-style-type: none">• I have three body paragraphs• Each body paragraph has a topic sentence.• Each body paragraph has 3 or more details.• Each body paragraph has a concluding sentence.			
End	<ul style="list-style-type: none">• I have 3-5 sentences that tie my writing together.			
Language	<ul style="list-style-type: none">• Written in the third person (no I, you, or we)• Present tense verbs• Jewel Words			
Purpose	<ul style="list-style-type: none">• Gives information about a topic relating to the United States during the 1930's.			
Use of Conventions	<ul style="list-style-type: none">• Complete sentences• Correct use of capital letters• Correct use of punctuation• Best spelling• Neat Handwriting			

Comments:

PM KINDERGARTEN	Raises hand to speak	Participates in a Group Setting	Participates in Class Decision Making	Accurately identifies respectful and disrespectful behavior	Takes turns and shares	Anecdotal Notes
Carson A.						
Lily C.						
Alex C.						
Brayden F.						
Zack H.						
Albert K.						
Sarah L.						
John N.						
Debbie P.						
Andrew R.						
Maureen S.						
Ray S.						
Phillip T.						
Lindsey W.						



Classroom Observation Form

Demonstrator: _____

Specialization: _____

Peer/Observer: _____

Date and Time: _____

Use criteria that apply to format of course observed.



Review Section	Description/Comments
1. SUBJECT MATTER CONTENT (shows good command and knowledge of subject matter; demonstrates breadth and depth of mastery)	
2. ORGANIZATION (organizes subject matter; evidences preparation; is thorough; states clear objectives; emphasizes and summarizes main points, meets class at a scheduled time, regularly monitors on-line course)	
3. RAPPORT (holds interest of students; is respectful, fair and impartial; provides feedback, encourages participation; interacts with students, shows enthusiasm)	
4. TEACHING METHODS (uses relevant teaching methods, aids, materials, techniques, and technology; includes variety balance, imagination, group involvement, uses examples that are simple, clear, precise, and appropriate; stays focused on and meets stated objectives)	
5. PRESENTATION (establishes online course or classroom environment conducive to learning; maintains eye contact; uses a clear voice, strong projection, proper enunciation, and standard English)	



In planning observations, one has to consider the following:

- ❑ When, where, how and what to observe
- ❑ How much degree of structure is necessary in the observation
- ❑ The duration of the observation, which must be suitable for the behaviour to occur and be observed
- ❑ Timing of the observation period
- ❑ The context of the observation
- ❑ The nature of the observation (structures, semi-structures, unstructured)
- ❑ The need to choose the appropriate kind of recording (Cohen *et.al.*, 2007).

1.4.2 Techniques for collecting data through observation

- **Written descriptors:** the researcher can record observations of people, a situation or an environment by taking notes of what has been observed.
- **Video recording:** this frees the observer from the task of taking notes
- **Artefacts:** artefacts are objects which inform us about a phenomenon under study because of their significance to the phenomenon. Examples would be the doctor's equipment in a particular clinic or art work hung in residential care homes.



1.5. Qualitative Data Analysis

What is meant by analysis: after the mass of words are generated by interviews or observational data, they need to be described and summarised.

- It may require from the researcher to seek relationships between various themes that have been identified.
- Finally, the results are presented, generally as a descriptive and interpretive account of the data.



1.5.2. Data analysis process

The analysis of qualitative data usually goes through some or all of the following stages:

- Familiarisation with the data through review, reading, listening...
- Transcription of tape recorded material: it is the full script of an interview or a conversation, or the procedure of producing a written version of these methods.

TRANSCRIPTIONS

- S You give us another quiz? (laughing)
- T Oh, quiz, old No, no, not today ... It's not going to be a quiz today ... sorry ... but, um, which today, Tuesday is it? (laughing)
- S Yes (responding)
- T I think on Thursday, if you like ... same as before ... only I'll stick up some new questions—the other ones were too easy ... um, okay, so I'll take some questions from, um, from newspapers over the last few weeks, right? so—means you've got to watch the news and read the newspapers and remember what's going on ... if you do, you'll win ... if not, well, that's life (responding)
- S Will be better than TV? (laughing)
- (laughing)
- T From the TV? ... What, er, what programmes ... (laughing)
- S News, even? (responding)
- T Did you say ... ? Oh, oh, well, even, er, it'll be the s ... it'll be the same ... there'll be different ... ? er, there'll be different ... ? Different? Different? The questions will be so different ... what? Different? (laughing)
- S Talks (responding)

- * provides detailed evidence on specific aspects of classroom interaction
- * can be analyzed through coding (category systems)
- * time-consuming

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- Organisation of data: after the transcription, it is necessary to organise the data into easily retrievable sections
 - Coding (called indexing): for example, sections of text transcripts may be marked by the researcher in various ways: **underlining in a coloured pen, highlighting, giving a numerical reference, or bracketed with a textual code in the margin.**
 - Identification of themes
 - Development of provisional categories
 - Exploration of relationships between categories, finding possible and plausible explanations for findings
 - Report writing

Qualitative data process



process data

Audio Recording

Visual Recording

Jotted Notes

Field notes

Recorded data

analysis data

Sort & classify
Open coding
Axial coding
Selective coding

Raw Data

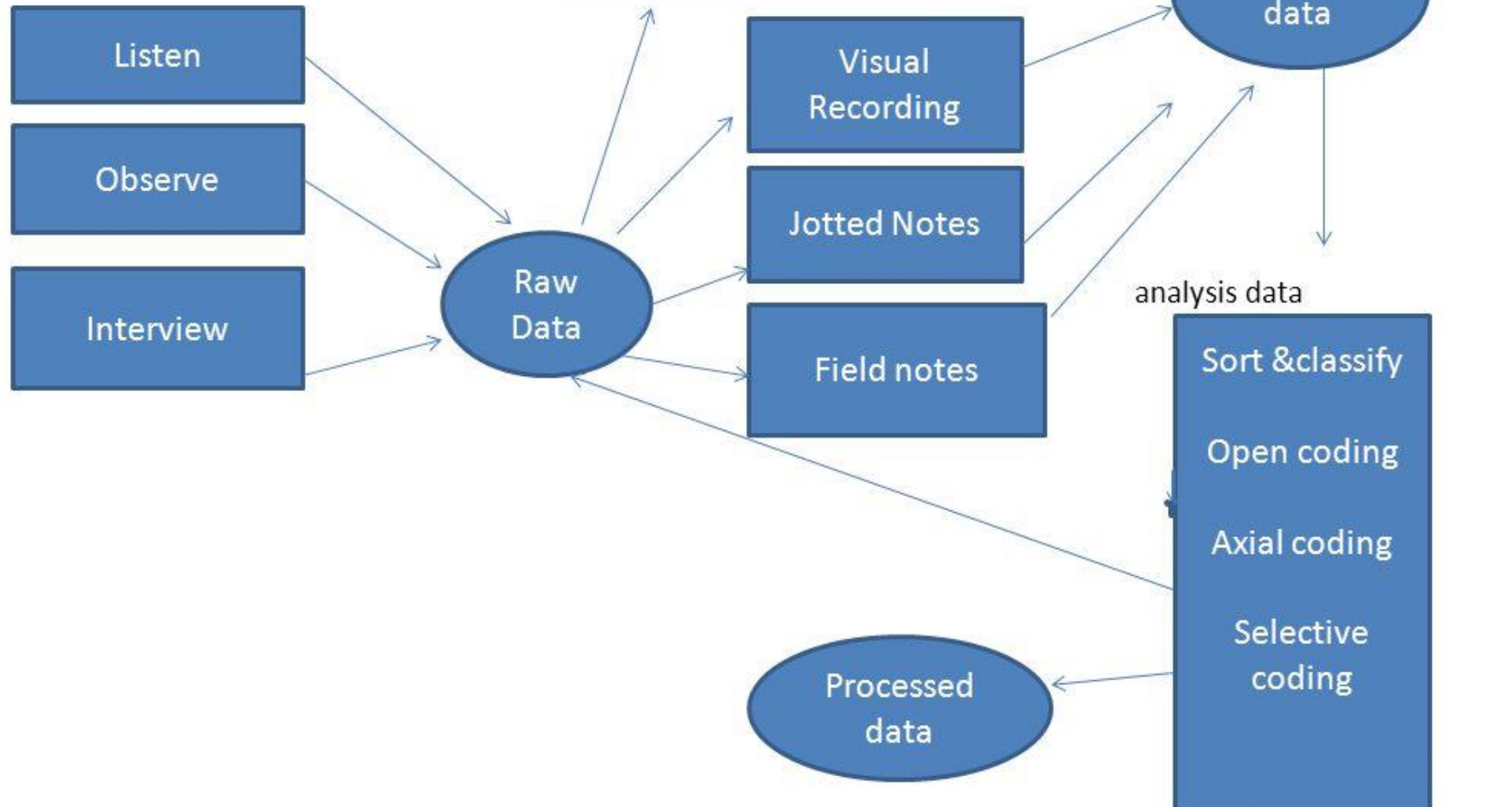
Processed data

Data collection

Listen

Observe

Interview

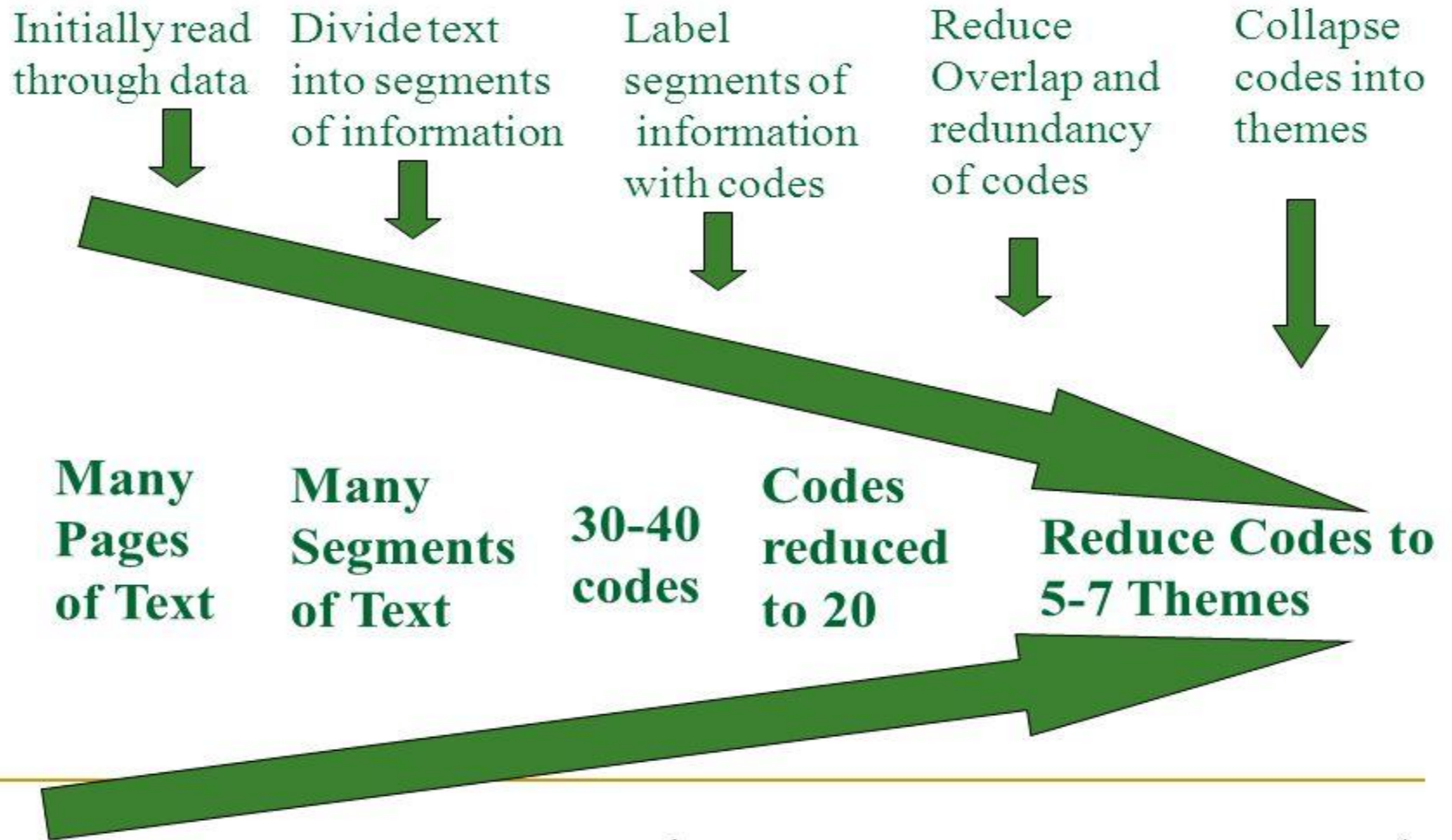


CODING

- Coding can be done in any number of **ways**, e.g. assigning a word, phrase, number, symbol or color to each coding category.
- Coding can also be done by **color coding** different categories on transcript and field notes or **cut text segments** and place them on note cards.
- It uses labels **to classify** and assign meaning to pieces of information.

^{own home}
^{alone / lonely}
When you move into your own home, you're alone. There is ^{people around} no bustle of people around the
^{miss company} house. I miss having someone to chat to when I get home. I put the TV or some music so ^{background noise}
^{lonely}
there's some background noise. the silence makes me feel so alone. Sometimes I will be sat
^{wasting time / inactive}
watching trash TV and thinking I should be out doing something rather than watching this
^{doing} rubbish. I read a lot but ^{tired / depressed} sometimes I am too tired and just want to veg out. But it's been good
^{unhealthy to be dependent}
to move out of mum and dads as it's not healthy to rely on them as they won't last forever. I
^{independence} become independent and made my own decisions. ^{support} It's good they still there when I need them.
^{distance} It's good to have some distance as when I was at home ^{conflict} I was arguing a lot with my dad and
^{moving out}
that was made me decide it was time to go.

A Visual Model of the Coding Process in Qualitative Research



1.5. 3. Computer software packages for qualitative analysis

Various packages have been developed to allow the researcher to organize, code and search data such as ATLAS.ti, used for large bodies of textual, graphical and audio and video data. CMAXQDA is another world-leading software for qualitative data analysis.

Qualitative Analysis Software

- Atlas.ti (<http://www.atlasti.com>)
- NVIVO (<http://www.qsrinternational.com>)
- QDA Miner (<http://provalisresearch.com>)
- Content Analysis
 - LightSide (<http://www.cs.cmu.edu/~emayfiel/side.html>)



LightSIDE: Machine Learning for Text



The software helps in:

- ❑ Data storage and management
- ❑ Data searching and retrieval
- ❑ Coding
- ❑ Developing and testing theory
- ❑ Writing reports

However, they cannot replace the human as they lack the capacity to think, reflect and Analyse.



Test yourself

- ❑ What is the difference between an interview and a focus group?
- ❑ Can these qualitative tools be used in quantitative research?
- ❑ Explain the term ‘probe’.
- ❑ How can you code the data?
- ❑ How can you identify themes in an interview?
- ❑ Explain briefly what is meant by: open coding, axial coding and selective coding.

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