

Qualitative Research

Week 5

Qualitative Data Analysis

Amare Desta

[PhD, MEd, MSc, LCGI, BSc (Hons)]

Professor of Information & Knowledge Management

Email: a.desta@uwtsd.ac.uk

Outline

- Qualitative research
- Analysis methods
- Validity and generalizability

Qualitative Research Methods

- Interviews
 - Ethnographic interviews (Spradley, 1979)
 - Contextual interviews (Holtzblatt and Jones, 1995)
- Ethnographic observation (Spradley, 1980)
- Participatory design sessions (Sanders, 2005)
- Field deployments

Qualitative Research Goals

- Meaning: how people see the world
- Context: the world in which people act
- Process: what actions and activities people do
- Reasoning: why people act and behave the way they do

Qualitative Vs. Quantitative

- Explanation through numbers
 - Objective
 - Deductive reasoning
 - Predefined variables and measurement
 - Data collection before analysis
 - Cause and effect relationships
- Explanation through words
 - Subjective
 - Inductive reasoning
 - Creativity, extraneous variables
 - Data collection and analysis intertwined
 - Description, meaning

Qualitative Vs. Quantitative

- Quantitative relies on deductive reasoning where you will start with a hypothesis or principle and attempt to prove/disprove it.
- Qualitative relies on inductive reasoning in which general principles are derived from particular facts or instances. You don't start with a hypothesis. You start by observing small samples and drawing larger conclusions about populations as a whole from these observations.

Getting 'Good' Qualitative Results

- Depends on:
 - The quality of the data collector
 - The quality of the data analyzer
 - The quality of the presenter / writer

Qualitative Data

- Written field notes
- Audio recordings of conversations
- Video recordings of activities
- Diary recordings of activities / thoughts

Qualitative Data

- Depth information on:
 - thoughts, views, interpretations
 - priorities, importance
 - processes, practices
 - intended effects of actions
 - feelings and experiences

Outline

- Qualitative research
- **Analysis methods**
- Validity and generalizability

Data Analysis

- Open Coding
- Systematic Coding
- Affinity Diagramming

P12 Stay-at-home Mother, Surgeon husband, nanny, 3 children (one is a newborn)

E is currently a stay at home mom whose husband is a surgeon. They have three children one of which is still only a few weeks old. They have a nanny, Bonnie, that usually works Mon- Thursday.

Main family calendar: is kept by the main computer in the den because E accesses Internet there. For example, got an email from neighbor about birthday party and transferred on to calendar on the 26th time, whose birthday, where it is, and included lunch. "Runch" is the community centre. The calendar contains: when Bonnie is off and when she is leaving early, tasks like sending in Bonnie's CPP for payroll, when her husband is out of town, reminders for getting a birth certificate (not tied to a particular day). E will put a bracket with initial of child next to some activities, e.g. gymnastics (K)

Examples (the annotated calendar image has a lot of great things on it to check out):

27th, bring in playdoh for preschool (Oscarapoo)

25th RRSP matures, to call banker

31.00 E describes all of the routine activities the kids have, check out audio for complete list
Preschool Kadin m, w, f, 9-12, 2 girls: T, R, F 1:30 - 4:30, m afternoon bonnie takes kids somewhere, t morning 9:15 both girls gymnastics, ... see audio recording... Preschool afternoon, Friday double day
Kadin preschool morning, both preschool in afternoon, Saturday ballet both 9:15-9:45, 9:45-10:30, Sunday both have swimming 9:30-10:10-10:30

E is the main person who adds to the calendar, but Bonnie will also add things about her that the family needs to know about (days off, etc). E's husband will write events about once a month but Elaine will often write down her husband's events for him when he tells her.

Pen: the closest pen at hand is usually the one that is used. Colors not used for anything special. E will use pencil if she knows she might erase it.

Route events: Ballet is not always written, but in an electronic calendar she would want routine days to always appear.

She has a Palm Pilot but is phasing out of it because she wants a new one. She only uses it for addresses now. She found the palm pilot too heavy. The problem with it is that it is the only place with the addresses and phone numbers for people they know. Her husband will look up addresses in her palm pilot if he is planning an event for them, but is cumbersome because he doesn't have the phone numbers written down anywhere else so must use her palm pilot.

Tentative: they are done in pencil or pen, but she may also put in a question mark

Annotations:

Circle with cross means husband not home for dinner

Yellow circle around numbers means husband is on call

E will put bracket across multiple days if an event may happen in one of those days

Crosses out days

Put just a number for routine activities to show the week of that activity, e.g., 5 with a circle around it would be 5th week of the activity, this way she knows how much to pay for the activity

Bracket on a day if overlapping events, a tick per child, no tick means just her

Overlapping events: Most of time two things are going on at once in the calendar,

19:00 tick system: writes a bracket beside event and will put a tick on the bracket for each person that needs to be at the event

"Most of the time I have two things going on at once. We have preschool in the afternoon so there are two kids at preschool, but at the same time I have to go to a doctor's appointment so they're happening at the same time. So that's why I ~~hate~~ need this tick-system cause I need to know if I have to drive a kid or if I

Open Coding

- Treat data as answers to open-ended questions
 - ask data specific questions
 - assign codes for answers
 - record theoretical notes

Example: Calendar Routines

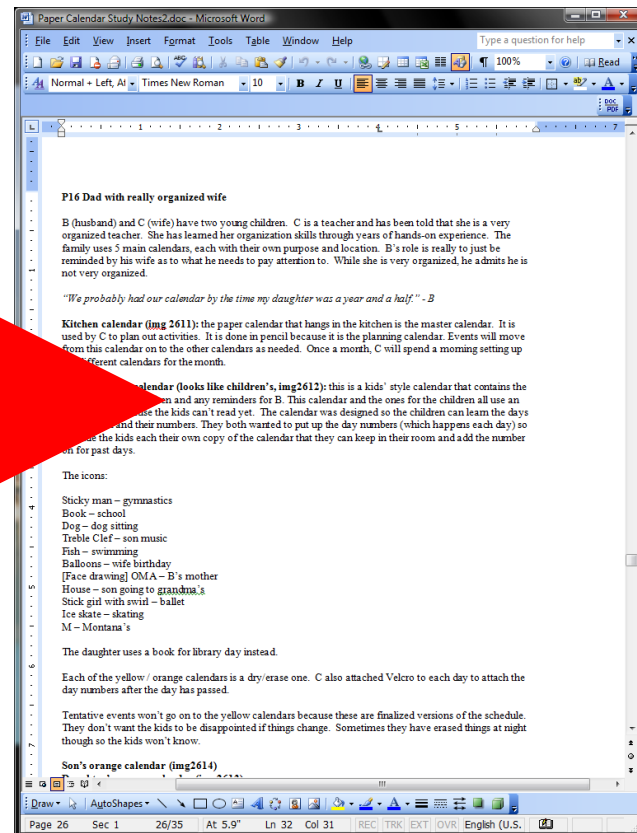
- Families were interviewed about their calendar routines
 - What calendars they had
 - Where they kept their calendars
 - What types of events they recorded
 - ...
- Written notes
- Audio recordings

Example: Calendar Routines

- Step 1: translate field notes (optional)



paper



digital

Example: Calendar Routines

- Step 2: list questions / focal points

Where do families keep their calendars?

What uses do they have for their calendars?

Who adds to the calendars?

When do people check the calendars?

...

(you may end up adding to this list as you go through your data)

Example: Calendar Routines

- Step 3: go through data and ask questions

B (husband) and C (wife) have two young children. C is a teacher and has been told that she is a very organized teacher. She has learned her organization skills through years of hands-on experience. The family uses 5 main calendars, each with their own purpose and location. B's role is really to just be reminded by his wife as to what he needs to pay attention to. While she is very organized, he admits he is not very organized.

"We probably had our calendar by the time my daughter was a year and a half." - B

Kitchen calendar (img 2611): the paper calendar that hangs in the kitchen is the master calendar. It is used by C to plan out activities. It is done in pencil because it is the planning calendar. Events will move from this calendar on to the other calendars as needed. Once a month, C will spend a morning setting up the different calendars for the month.

Orange family calendar (looks like children's, img2612): this is a kids' style calendar that contains the activities for the children and any reminders for B. This calendar and the ones for the children all use an icon system because the kids can't read yet. The calendar was designed so the children can learn the days of the week and their numbers. They both wanted to put up the day numbers (which happens each day) so C made the kids each their own copy of the calendar that they can keep in their room and add the number on for past days.

Where do families keep their calendars?

Example: Calendar Routines

- Step 3: go through data and ask questions

B (husband) and C (wife) have two young children. C is a teacher and has been told that she is a very organized teacher. She has learned her organization skills through years of hands-on experience. The family uses 5 main calendars, each with their own purpose and location. B's role is really to just be reminded by his wife as to what he needs to pay attention to. While she is very organized, he admits he is not very organized.

"We probably had our calendar by the time my daughter was a year and a half." - B

[KI]

Kitchen calendar (img 2611): the paper calendar that hangs in the kitchen is the master calendar. It is used by C to plan out activities. It is done in pencil because it is the planning calendar. Events will move from this calendar on to the other calendars as needed. Once a month, C will spend a morning setting up the different calendars for the month.

Orange family calendar (looks like children's, img2612): this is a kids' style calendar that contains the activities for the children and any reminders for B. This calendar and the ones for the children all use an icon system because the kids can't read yet. The calendar was designed so the children can learn the days of the week and their numbers. They both wanted to put up the day numbers (which happens each day) so C made the kids each their own copy of the calendar that they can keep in their room and add the number on for past days.

Calendar Locations:

[KI] – the kitchen

Where do families keep their calendars?

Example: Calendar Routines

- Step 3: go through data and ask questions

B (husband) and C (wife) have two young children. C is a teacher and has been told that she is a very organized teacher. She has learned her organization skills through years of hands-on experience. The family uses 5 main calendars, each with their own purpose and location. B's role is really to just be reminded by his wife as to what he needs to pay attention to. While she is very organized, he admits he is not very organized.

"We probably had our calendar by the time my daughter was a year and a half." - B

[KI]

Kitchen calendar (img 2611): the paper calendar that hangs in the kitchen is the master calendar. It is used by C to plan out activities. It is done in pencil because it is the planning calendar. Events will move from this calendar on to the other calendars as needed. Once a month, C will spend a morning setting up the different calendars for the month.

Orange family calendar (looks like children's, img2612): this is a kids' style calendar that contains the activities for the children and any reminders for B. This calendar and the ones for the children all use an icon system because the kids can't read yet. The calendar was designed so the children can learn the days of the week and their numbers. They both wanted to put up the day numbers (which happens each day) so C made the kids each their own copy of the calendar that they can keep in their room and add the number on for past days.

[CR]

Calendar Locations:

[KI] – the kitchen

[CR] – child's room

Where do families keep their calendars?

Example: Calendar Routines

- Step 3: go through data and ask questions

B (husband) and C (wife) have two young children. C is a teacher and has been told that she is a very organized teacher. She has learned her organization skills through years of hands-on experience. The family uses 5 main calendars, each with their own purpose and location. B's role is really to just be reminded by his wife as to what he needs to pay attention to. While she is very organized, he admits he is not very organized.

"We probably had our calendar by the time my daughter was a year and a half." - B

[KI]

Kitchen calendar (img 2611): the paper calendar that hangs in the kitchen is the master calendar. It is used by C to plan out activities. It is done in pencil because it is the planning calendar. Events will move from this calendar on to the other calendars as needed. Once a month, C will spend a morning setting up the different calendars for the month.

Orange family calendar (looks like children's, img2612): this is a kids' style calendar that contains the activities for the children and any reminders for B. This calendar and the ones for the children all use an icon system because the kids can't read yet. The calendar was designed so the children can learn the days of the week and their numbers. They both wanted to put up the day numbers (which happens each day) so C made the kids each their own copy of the calendar that they can keep in their room and add the number on for past days.

[CR]

Calendar Locations:

[KI] – the kitchen

[CR] – child's room

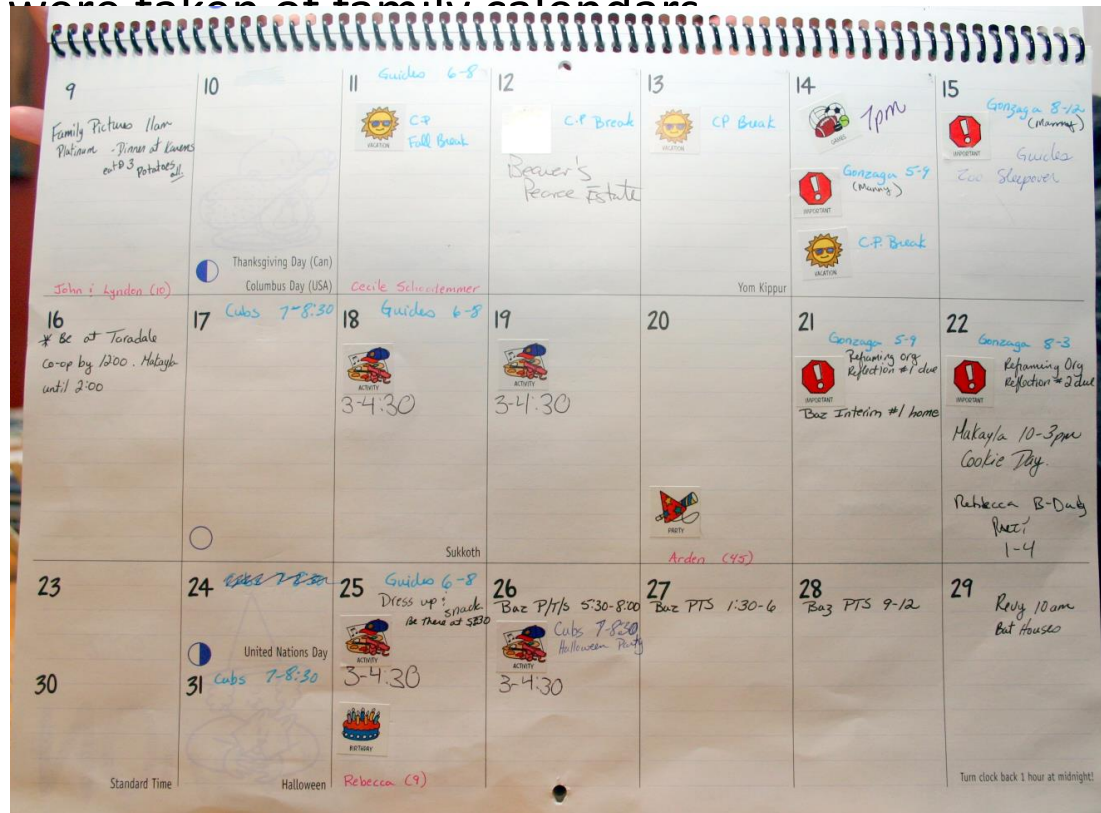
Continue for the remaining questions....

Example: Calendar Routines

- The result:
 - list of codes
 - frequency of each code
 - a sense of the importance of each code
- frequency != importance

Example 2: Calendar Contents

- Pictures were taken of family calendars



Example: Calendar Contents

- Step 1: list questions / focal points

What type of events are on the calendar?

Who are the events for?

What other markings are made on the calendar?

...

(you may end up adding to this list as you go through your data)

Example: Calendar Contents

- Step 2: go through data and ask questions



What types of events are on the calendar?

Example: Calendar Contents

- Step 2: go through data and ask questions



Types of Events:

[FO] – family outing

What types of events are on the calendar?

Example: Calendar Contents

- Step 2: go through data and ask questions



Types of Events:

[FO] – family outing
[AN] - anniversary

What types of events are on the calendar?

Example: Calendar Contents

- Step 2: go through data and ask questions



Types of Events:

- [FO] – family outing
- [AN] - anniversary

Continue for the remaining questions....

Reporting Results

- Find the main themes
- Use quotes / scenarios to represent them
- Include counts for codes (optional)

Dad's role. *"I'm pretty used to our schedule so I don't need to check it that often. As sad as it is, I work full time so a lot of activities don't pertain to me. But Fridays change because I may be home. I may also glance at it because the activities end at regular periods. I look for the ends of things because I'll try to make it to the last class so I can make it to at least one of their classes during that activity. And I'll glance at it to see if anything is out of the ordinary. I get used to the pattern so if there is something that is out of the ordinary I'll take a closer look to see what's going on...I don't have to do much. If I have something that is coming up, I'll just tell [my wife] then she'll know where I am and I'll know."* - B

Software: Microsoft Word

SamplePhotoSouvenirCoding.doc - Microsoft Word

File Edit View Insert Format Tools Table Window Help

Type a question for help

Normal + Tahom Tahoma 12 B I U

Non-Digital Photo Routines

P#	Where do you display your photos?	How did you decide to store your photos there?	Why did you store your photos there?	What works well about this location?	What doesn't work well about this location?	Etc.
1	[LR]		[PU]			
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
Totals						

Location Codes:
[LR] A location within the living room of the home.

Page 2 Sec 1 2/4 At Ln Col REC TRK EXT OVR English (U.S.)

Software: Microsoft Excel

Microsoft Excel - SamplePhotoSouvenirCoding.xls

File Edit View Insert Format Tools Data Window Help

Type a question for help

DOC PDF

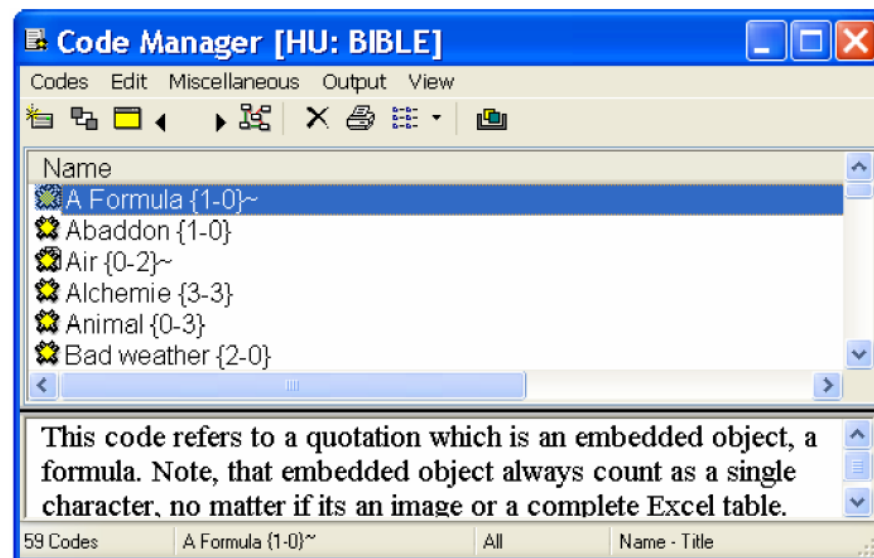
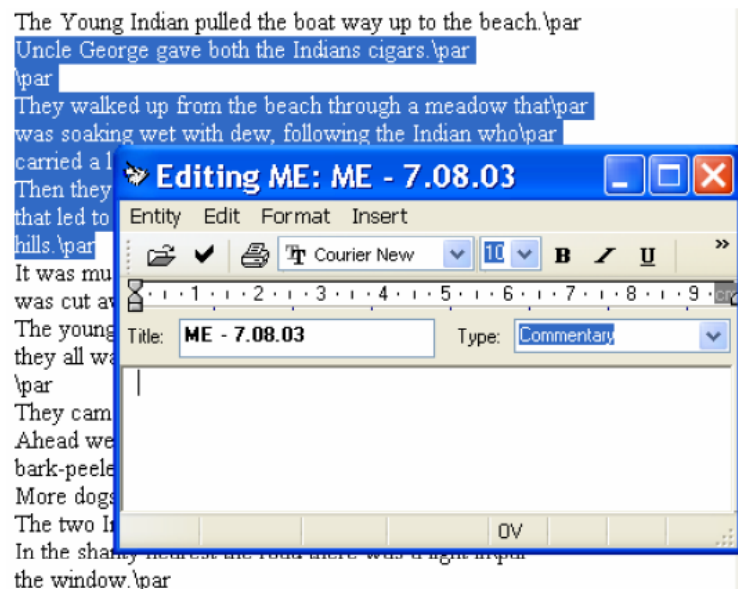
O17

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1														
2		Sample Photo and Souvenir Study Coding												
3														
4		Demographics						Non-Digital Photo Routines						
5	ID	# of Hd	Membe	Membe	Membe	Membe	Parent	Parent	Where	How di	Why di	What w	What d	Etc
6	F1	4	5	6	34	36	Teacher	Trucker	LR		PU			
7	F2													
8	F3													
9	F4													
10	F5													
11	F6													
12	F7													
13	F8													
14	F9													
15	F10													
16	F11													
17	F12													
18														
19														
20														
21														
22														
23														
24														
25	Codes for Locations:													
26	LR	A location within the living room of the home.												
27														
28														

Sheet1 Sheet2 Sheet3

Ready

Software: ATLAS.ti



<http://www.atlasti.com/> -- free trial available

Data Analysis

- Open Coding
- Systematic Coding
- Affinity Diagramming

P12 Stay-at-home Mother, Surgeon husband, nanny, 3 children (one is a newborn)

E is currently a stay at home mom whose husband is a surgeon. They have three children one of which is still only a few weeks old. They have a nanny, Bonnie, that usually works Mon- Thursday.

Main family calendar: is kept by the main computer in the den because E accesses Internet there. For example, got an email from neighbor about birthday party and transferred on to calendar on the 26th time, whose birthday, where it is, and included lunch. "Runch" is the community centre. The calendar contains: when Bonnie is off and when she is leaving early, tasks like sending in Bonnie's CPP for payroll, when her husband is out of town, reminders for getting a birth certificate (not tied to a particular day). E will put a bracket with initial of child next to some activities, e.g. gymnastics (K)

Examples (the annotated calendar image has a lot of great things on it to check out):

27th, bring in playdoh for preschool (Quesada)

25th RRSP matures, to call banker

31.00 E describes all of the routine activities the kids have, check out audio for complete list
Preschool Kadin m, w, f, 9-12, 2 girls: T, R, F 1:30 - 4:30, m afternoon bonnie takes kids somewhere, t morning 9:15 both girls gymnastics, ... see audio recording ... Preschool afternoon, Friday double day
Kadin preschool morning, both preschool in afternoon, Saturday ballet both 9:15-9:45, 9:45-10:30, Sunday both have swimming 9:30-10:10-10:30

E is the main person who adds to the calendar, but Bonnie will also add things about her that the family needs to know about (days off, etc). E's husband will write events about once a month but Elaine will often write down her husband's events for him when he tells her.

Pen: the closest pen at hand is usually the one that is used. Colors not used for anything special. E will use pencil if she knows she might erase it.

Route events: Ballet is not always written, but in an electronic calendar she would want routine days to always appear.

She has a Palm Pilot but is phasing out of it because she wants a new one. She only uses it for addresses now. She found the palm pilot too heavy. The problem with it is that it is the only place with the addresses and phone numbers for people they know. Her husband will look up addresses in her palm pilot if he is planning an event for them, but is cumbersome because he doesn't have the phone numbers written down anywhere else so must use her palm pilot.

Tentative: they are done in pencil or pen, but she may also put in a question mark

Annotations:

Circle with cross means husband not home for dinner

Yellow circle around numbers means husband is on call

E will put bracket across multiple days if an event may happen in one of those days

Crosses out days

Put just a number for routine activities to show the week of that activity, e.g., 5 with a circle around it would be 5th week of the activity, this way she knows how much to pay for the activity

Bracket on a day if overlapping events, a tick per child, no tick means just her

Overlapping events: Most of time two things are going on at once in the calendar,

19:00 tick system: writes a bracket beside event and will put a tick on the bracket for each person that needs to be at the event

"Most of the time I have two things going on at once. We have preschool in the afternoon so there are two kids at preschool, but at the same time I have to go to a doctor's appointment so they're happening at the same time. So that's why I ~~hate~~ need this tick-system cause I need to know if I have to drive a kid or if I

Systematic Coding

- Categories are created ahead of time
 - from existing literature
 - from previous open coding
- Code the data just like open coding

Data Analysis

- Open Coding
- Systematic Coding
- Affinity Diagramming

P12 Stay-at-home Mother, Surgeon husband, nanny, 3 children (one is a newborn)

E is currently a stay at home mom whose husband is a surgeon. They have three children one of which is still only a few weeks old. They have a nanny, Bonnie, that usually works Mon- Thursday.

Main family calendar: is kept by the main computer in the den because E accesses Internet there. For example, got an email from neighbor about birthday party and transferred on to calendar on the 26th time, whose birthday, where it is, and included lunch. "Runch" is the community centre. The calendar contains: when Bonnie is off and when she is leaving early, tasks like sending in Bonnie's CPP for payroll, when her husband is out of town, reminders for getting a birth certificate (not tied to a particular day). E will put a bracket with initial of child next to some activities, e.g. gymnastics (K)

Examples (the annotated calendar image has a lot of great things on it to check out):

27th, bring in playdoh for preschool (Oscarapoo)

25th RRSP matures, to call banker

31.00 E describes all of the routine activities the kids have, check out audio for complete list
Preschool Kadin m, w, f 9-12, 2 girls: T, R, F 1:30 - 4:30, m afternoon bonnie takes kids somewhere, t morning 9:15 both girls gymnastics, ... see audio recording... Preschool afternoon, Friday double day
Kadin preschool morning, both preschool in afternoon, Saturday ballet both 9:15-9:45, 9:45-10:30, Sunday both have swimming 9:30-10:10-10:30

E is the main person who adds to the calendar, but Bonnie will also add things about her that the family needs to know about (days off, etc). E's husband will write events about once a month but Elaine will often write down her husband's events for him when he tells her.

Pen: the closest pen at hand is usually the one that is used. Colors not used for anything special. E will use pencil if she knows she might erase it.

Route events: Ballet is not always written, but in an electronic calendar she would want routine days to always appear.

She has a Palm Pilot but is phasing out of it because she wants a new one. She only uses it for addresses now. She found the palm pilot too heavy. The problem with it is that it is the only place with the addresses and phone numbers for people they know. Her husband will look up addresses in her palm pilot if he is planning an event for them, but is cumbersome because he doesn't have the phone numbers written down anywhere else so must use her palm pilot.

Tentative: they are done in pencil or pen, but she may also put in a question mark

Annotations:

Circle with cross means husband not home for dinner

Yellow circle around numbers means husband is on call

E will put bracket across multiple days if an event may happen in one of those days

Crosses out days

Put just a number for routine activities to show the week of that activity, e.g., 5 with a circle around it would be 5th week of the activity, this way she knows how much to pay for the activity

Bracket on a day if overlapping events, a tick per child, no tick means just her

Overlapping events: Most of time two things are going on at once in the calendar, 19:00 tick system: writes a bracket beside event and will put a tick on the bracket for each person that needs to be at the event

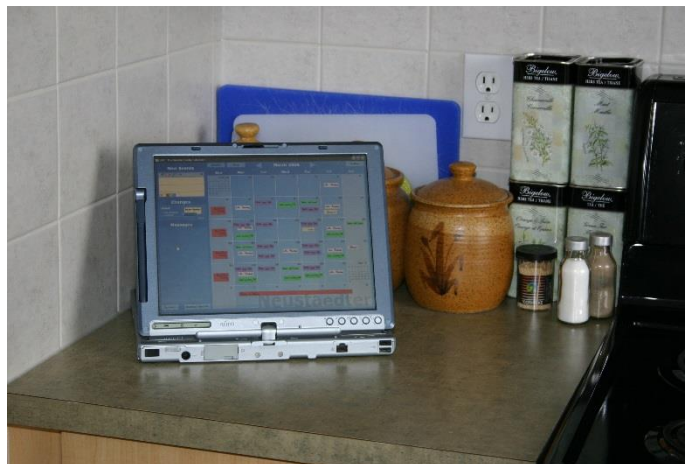
"Most of the time I have two things going on at once. We have preschool in the afternoon so there are two kids at preschool, but at the same time I have to go to a doctor's appointment so they're happening at the same time. So that's why I ~~hate~~ need this tick-system cause I need to know if I have to drive a kid or if I

Affinity Diagramming

- Goal: what are the main themes?
 - Write ideas on sticky notes
 - Place notes on a large wall / surface
 - Group notes hierarchically to see main themes

Example: Calendar Field Study

- Families were given a digital calendar to use in their homes
- Thoughts / reactions recorded:
 - Weekly interview notes
 - Audio recordings from interviews



Example: Calendar Field Study

- Step 1: Affinity Notes

- go through data and write observations down on post-it notes
- each note contains one idea

It was really easy to check the calendar from work because of the web page.

The colors on the events made it really easy to see who had events.

I check my calendar on my cell phone while driving.

The size of the writing was too small to read.

We couldn't place the calendar in the spot we usually do in our home.

Example: Calendar Field Study

- Step 2: Diagram Building
 - place all notes on a wall / surface

It was really easy to check the calendar from work because of the web page.

The colors on the events made it really easy to see who had events

I check my calendar on my cell phone while driving.

The size of the writing was too small to read.

We couldn't place the calendar in the spot we usually do in our home.

Example: Calendar Field Study

- Step 3: Diagram Building
 - move notes into related columns / piles

It was really easy to check the calendar from work because of the web page.

The colors on the events made it really easy to see who had events

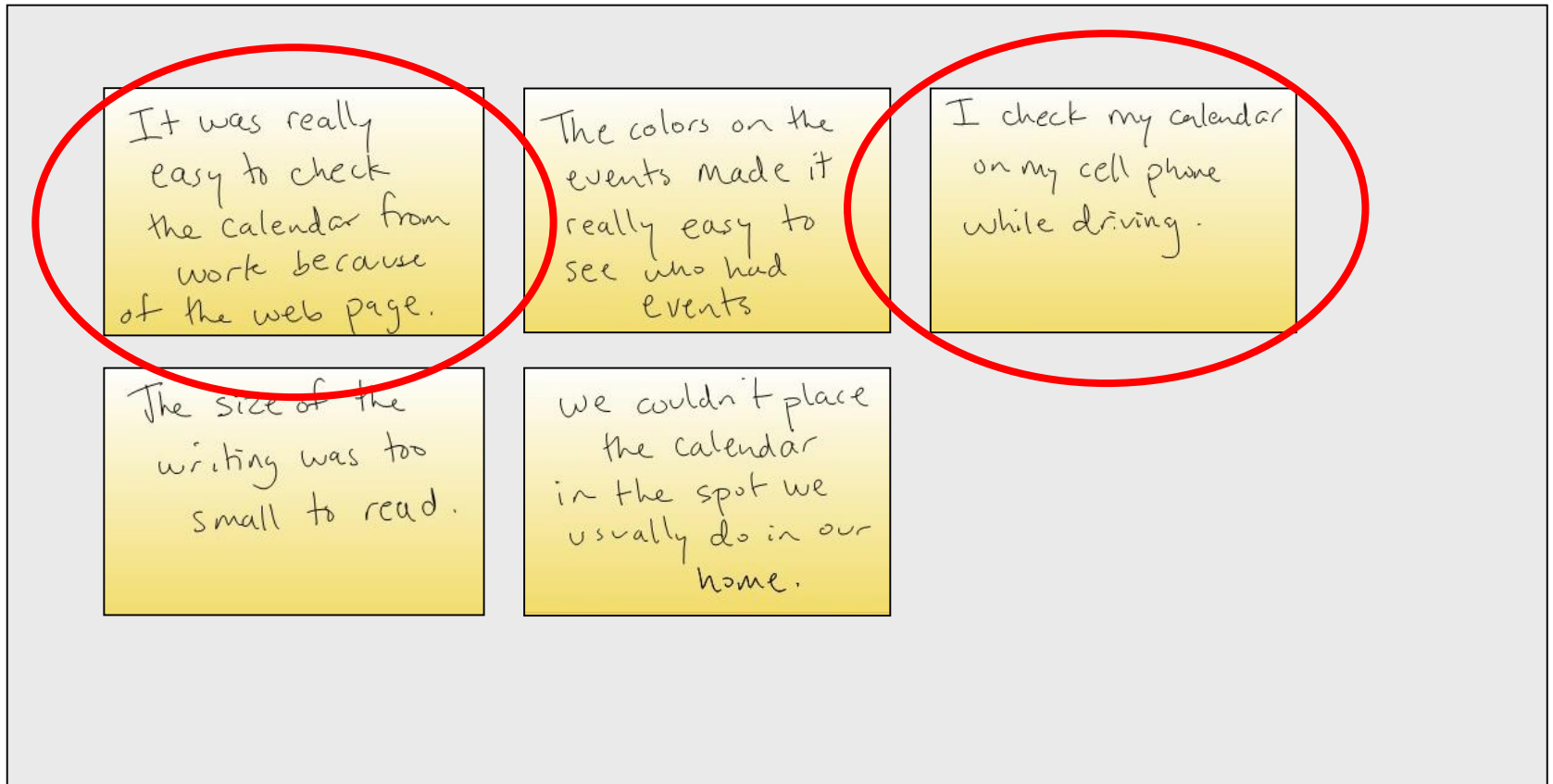
I check my calendar on my cell phone while driving.

The size of the writing was too small to read.

We couldn't place the calendar in the spot we usually do in our home.

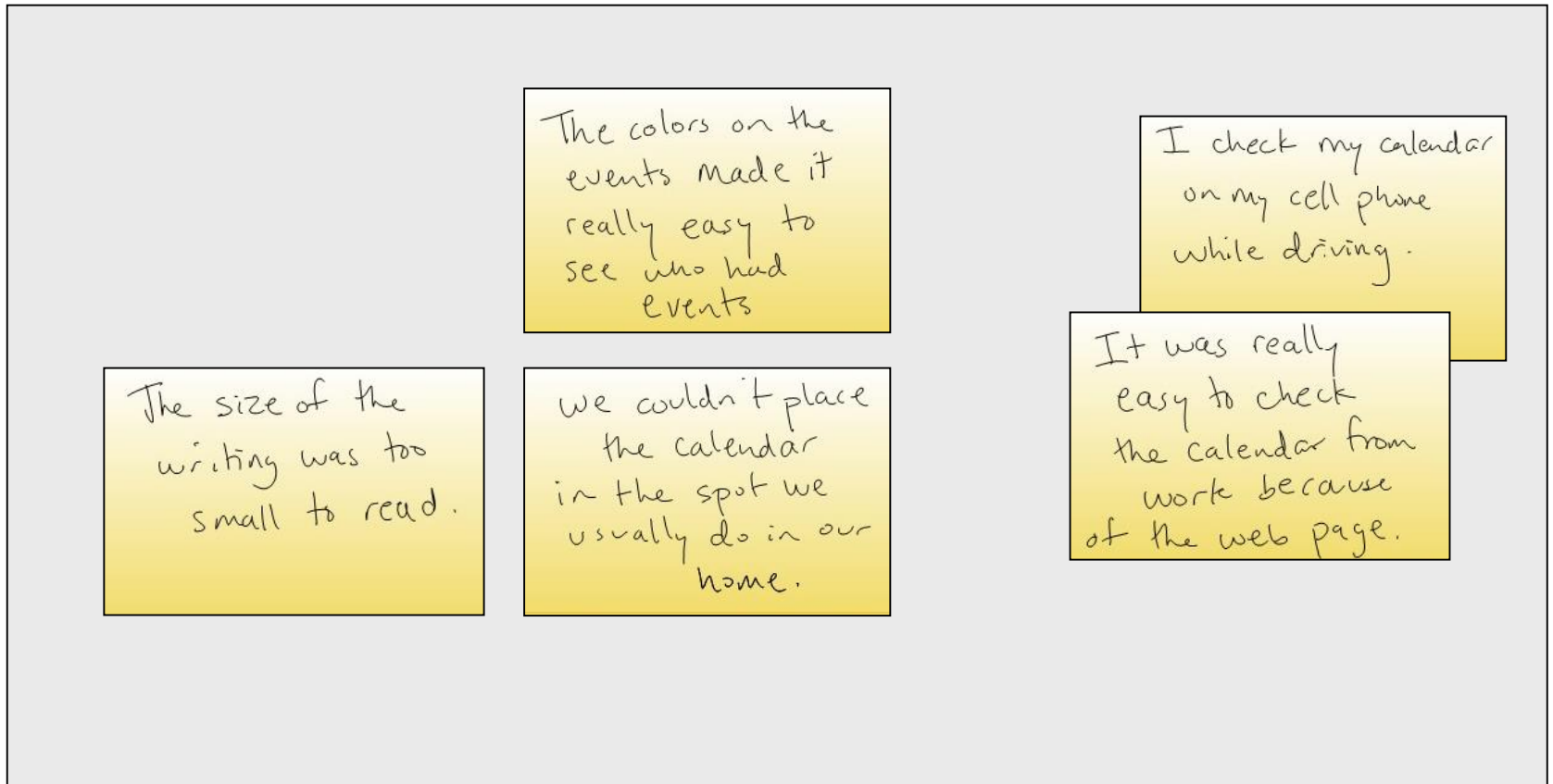
Example: Calendar Field Study

- Step 3: Diagram Building
 - move notes into related columns / piles



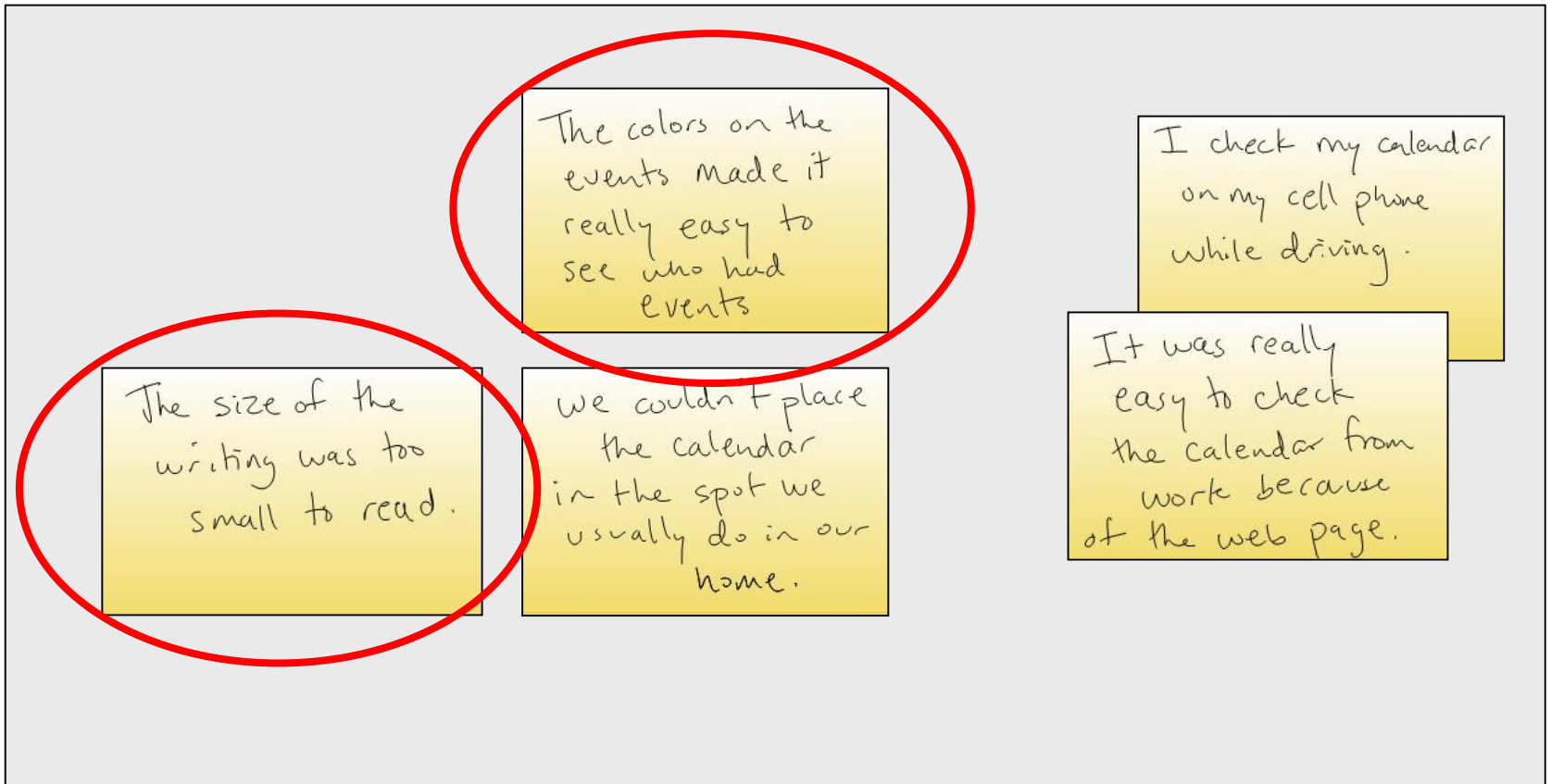
Example: Calendar Field Study

- Step 3: Diagram Building
 - move notes into related columns / piles



Example: Calendar Field Study

- Step 3: Diagram Building
 - move notes into related columns / piles



Example: Calendar Field Study

- Step 3: Diagram Building
 - move notes into related columns / piles

The colors on the events made it really easy to see who had events

The size of the writing was too small to read.

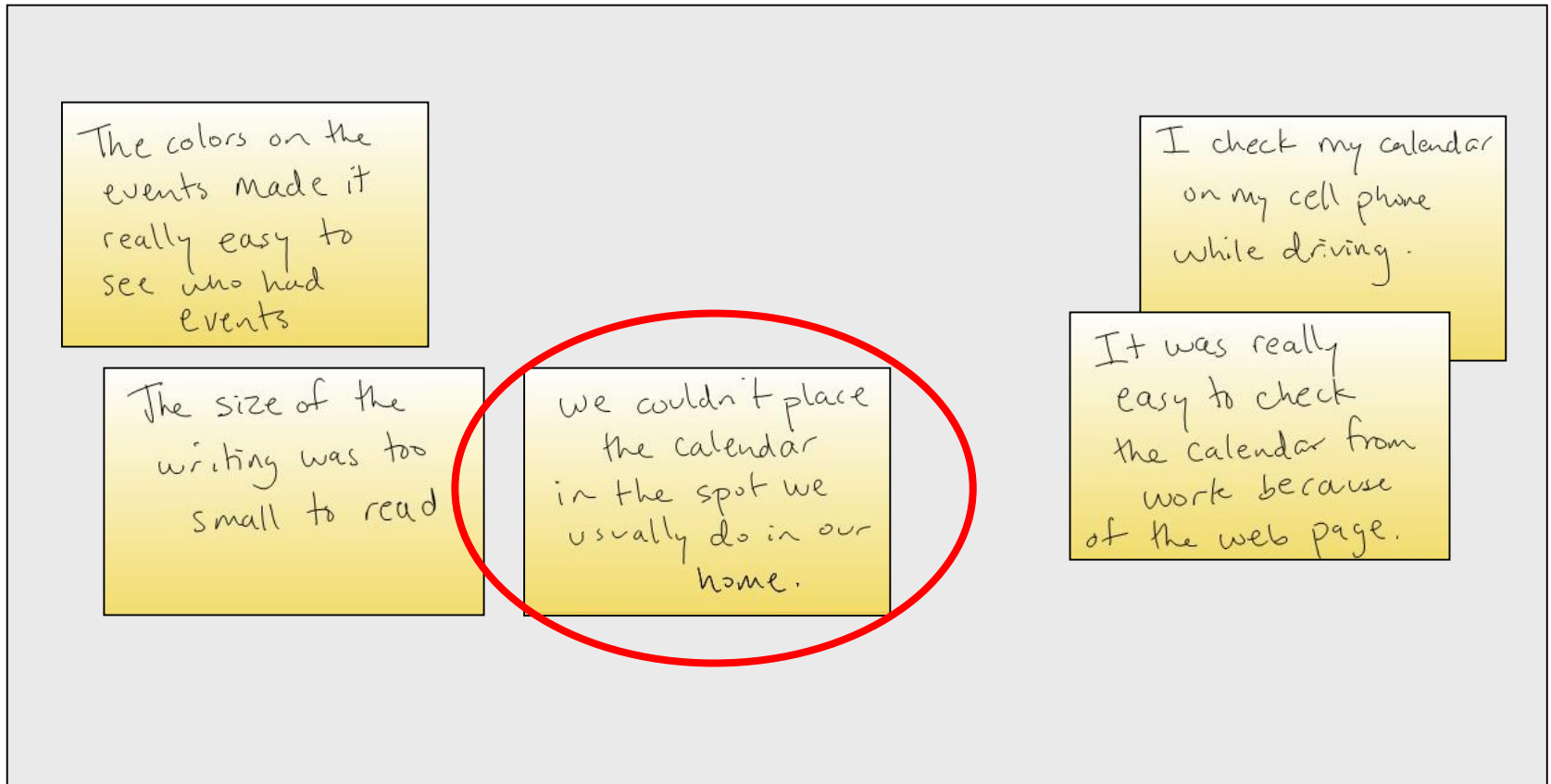
We couldn't place the calendar in the spot we usually do in our home.

I check my calendar on my cell phone while driving.

It was really easy to check the calendar from work because of the web page.

Example: Calendar Field Study

- Step 3: Diagram Building
 - move notes into related columns / piles



Example: Calendar Field Study

- Step 3: Diagram Building
 - move notes into related columns / piles

we couldn't place
the calendar
in the spot we
usually do in our
home.

The colors on the
events made it
really easy to
see who had
events

The size of the
writing was too
small to read.

I check my calendar
on my cell phone
while driving.

It was really
easy to check
the calendar from
work because
of the web page.

Example: Calendar Field Study

- Step 4: Affinity Labels
 - write labels describing each group

we couldn't place
the calendar
in the spot we
usually do in our
home.

The colors on the
events made it
really easy to
see who had
events

The size of the
writing was too
small to read.

I check my calendar
on my cell phone
while driving.

It was really
easy to check
the calendar from
work because
of the web page.

Example: Calendar Field Study

- Step 4: Affinity Labels
 - write labels describing each group

Calendar placement is a challenge

we couldn't place the calendar in the spot we usually do in our home.

The colors on the events made it really easy to see who had events

The size of the writing was too small to read.

I check my calendar on my cell phone while driving.

It was really easy to check the calendar from work because of the web page.

Example: Calendar Field Study

- Step 4: Affinity Labels
 - write labels describing each group

Calendar placement is a challenge

we couldn't place the calendar in the spot we usually do in our home.

Interface visuals affect usage

The colors on the events made it really easy to see who had events

The size of the writing was too small to read.

I check my calendar on my cell phone while driving.

It was really easy to check the calendar from work because of the web page.

Example: Calendar Field Study

- Step 4: Affinity Labels
 - write labels describing each group

Calendar placement is a challenge

we couldn't place the calendar in the spot we usually do in our home.

Interface visuals affect usage

The colors on the events made it really easy to see who had events

The size of the writing was too small to read.

People check the calendar when not at home

I check my calendar on my cell phone while driving.

It was really easy to check the calendar from work because of the web page.

Example: Calendar Field Study

- Step 5: Further Refine Groupings
 - see Holtzblatt et al. 2005

Calendar placement is a challenge

we couldn't place the calendar in the spot we usually do in our home.

Interface visuals affect usage

The colors on the events made it really easy to see who had events

The size of the writing was too small to read.

People check the calendar when not at home

I check my calendar on my cell phone while driving.

It was really easy to check the calendar from work because of the web page.

Outline

- Qualitative research
- Analysis methods
- **Validity and generalizability**

Validity Threats

- Bias
 - researcher's influence on the study
 - e.g., studying one's own culture
- Reactivity
 - researcher's effect on the setting or people
 - e.g., people may do things differently

Generalizability

- Internal generalizability
 - do findings extend *within* the group studied?
- External generalizability
 - do findings extend *outside* the group studied?
- Face generalizability
 - there is no reason to believe the results don't generalize

- Internal generalizability: you may have studied only a few people within a larger group. Do findings extend to all people in this group?
- External generalizability: do findings extend outside this group?
- This is typically not the focus as qualitative studies focus on one particular type of group.
- It is difficult to get external validity (generalizability) with qualitative research. Instead, you should seek **face generalizability** -- there is no obvious reason not to believe that the results don't generalize to the larger population. Use some of the validity tests just described to do this, look for negative cases, etc.

Summary

- Qualitative goals:
 - meaning, context, process, reasoning
- Good qualitative research:
 - data collector / analyzer / presenter

Summary

- Qualitative data:
 - detailed descriptions (audio, written, video)
- Analysis methods:
 - open coding
 - systematic coding
 - affinity diagramming

Summary

- Report descriptions / scenarios / quotes
- Look for face generalizability
- Use validity tests

References

1. Dix, A., Finlay, J., Abowd, G., & Beale, R., (1998) **Human Computer Interaction, 2nd ed.** Toronto: Prentice-Hall.
 - Chapter 11: qualitative methods in general
2. Holtzblatt, K, and Jones, S., (1995) **Conducting and Analyzing a Contextual Interview**, In *Readings in Human-Computer Interaction: Toward the Year 2000*, 2nd ed., R.M. Baecker, et al., Editors, Morgan Kaufman, pp. 241-253.
 - conducting and analyzing contextual interviews
3. Holtzblatt, K, Wendell, J., and Wood, S., (2005) **Rapid Contextual Design: A How-To Guide to Key Techniques for User-Centered Design**, Morgan Kaufmann.
 - Chapter 8: building affinity diagrams
4. Maxwell, J., (2005) **Qualitative Research Design**, In *Applied Social Research Methods Series*, Volume 41.
 - Chapter 1: a model for qualitative research design
 - Chapter 5: choosing qualitative methods and analysis
 - Chapter 6: validity and generalizability
5. Neustaedter, C. 2007. **Domestic Awareness and Family Calendars**, PhD Dissertation, University of Calgary, Canada.
 - example qualitative studies, analysis, and results reporting
6. Sanders, E.B. 1999. **From User-Centered to Participatory Design Approaches**, In *Design and Social Sciences*, J. Frascara (Ed.), Taylor and Francis Books Limited.
 - participatory design for idea generation
7. Spradley, J. (1979) **The Ethnographic Interview**, Holt, Rinehart & Winston.
 - Part 2, Step 2: interviewing an informant
 - Part 2, Step 5: analyzing ethnographic interviews
8. Spradley, J., (1980) **Participant Observation**, Harcourt Brace Jovanovich.
 - Part 2, Step 2: doing participant observation
 - Part 2, Step 3: making an ethnographic record
9. Strauss, A., and Corbin, J., (1998). **Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory**, SAGE Publications.
 - Part 2: coding procedures

Useful Links

- <https://www.youtube.com/watch?v=7X7VuQxPfpk>