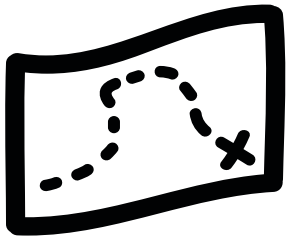
the Factor field guide to

User Research for Taxonomy Design



A quick guide to building the taxonomies people need

From the user research team at Factor

How do you build a good taxonomy?

That's a big question, and it has all kinds of complicated answers. It's also not the question we're answering here. Instead, we'll ask you:

How do you build the right taxonomy?

A taxonomy that's good might not be right for the people who are going to be using it. The right taxonomy will be well-constructed, yes, but it will also have a scope that suits its purpose, a structure that reflects its users' mental models, and terms that incorporate their language.

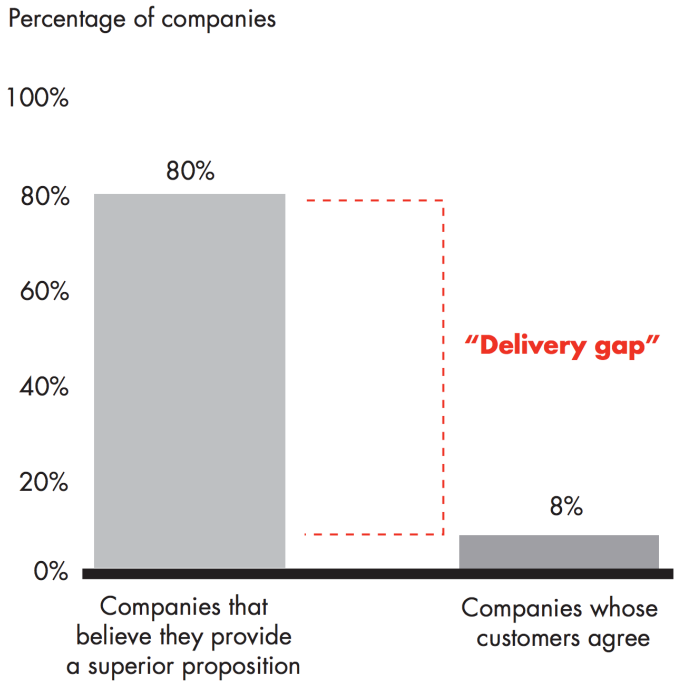
So how do you build the right taxonomy for your people? You talk to them.

Do you know what your users need?

Usually, our knee-jerk answer to this question is, "Yes, of course we know what users need!" We are perceptive, empathetic people who are good at our jobs, of course we know what a taxonomy needs to do for its users. Ideas like user warrant and techniques like card sorting are classics in taxonomy practice, and for good reason, but you have to start sooner. You have to start asking yourself from the very beginning, "Do we really know what they need from this taxonomy?"

Are you sure?

We're making a big deal about this because it's important, and it's something that nearly every organization gets wrong. It's an old statistic, and one you might be tired of hearing, but when Bain surveyed 362 firms on the quality of experience they delivered, they found that 80% believed they were giving their customers a "superior experience." However, when those customers were surveyed, only 8% agreed.



From "Closing the Delivery Gap," Bain & Company, 2005

How does this happen? These are big organizations, with deep expertise in their fields, and a bottom line that depends on making customers happy.

It happens by assuming you already know what your users need. How sure are you that you're in the small percentage that are actually delivering what their users want and need? This is why you do user research. To put it bluntly: User research allows you to stop guessing about what might improve the user's experience, and instead, make changes based on actual evidence of what they need.

It's worth noting that analytics are great, and we absolutely recommend using more quantitative data (like site analytics) in tandem with qualitative data (like generative user research), but one doesn't replace the other. Quantitative data can surface what is happening, and qualitative research can surface why something is happening.

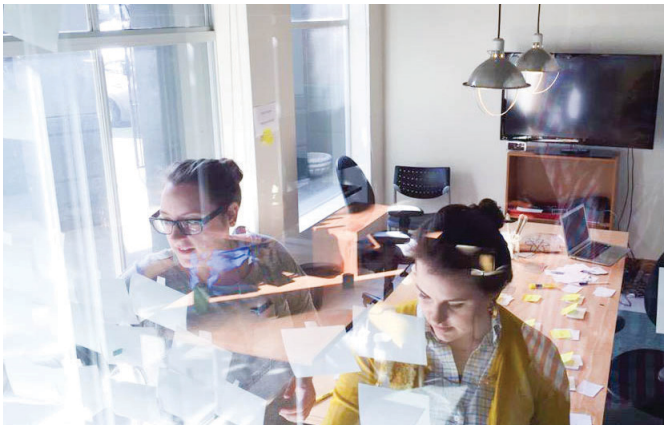
This level of insight is completely within your reach, even if you don't have a research organization at your disposal. Anyone can get started in user research. Of course, advanced user research takes a certain amount of academic rigor, practice, and structure, but that shouldn't stop you from doing some basic user research to inform your own work.

> Evaluative user research **evaluates** whether something you've already designed is working. It can be done on a live site or a prototype. Closed card sorting is an example of evaluative user research, as is usability testing.
>
> Generative user research **generates** new ideas, before you start a design. It doesn't require anything to be built beforehand. Open card sorting is an example of generative user research, as is the kind of contextual inquiry (a fancy term for "talking to people as they do things") we focus on in this guide.

WHY LISTEN TO US?

We're user researchers and taxonomists, equally. Factor's practice synthesizes in-depth information modeling with rigorous user centered design techniques, so we start thinking about the two together, from the very beginning.

Also, we do this ourselves. A lot. Over just the last year, we did a dozen different user studies to inform taxonomy development for enterprise-level clients and refined our method with each one. We've gone a long way toward figuring out what works, what doesn't, and what you really need in order to develop taxonomies that do what your users need them to.



Doing thematic analysis (something you'll learn to do in Part 6)

WHERE TO START?

At the very beginning. Don't wait until it's time to test a draft taxonomy to talk to your users. Get them in your head from the start.

To show you how we do it, we're going to take you through a case study, step by step.

CASE STUDY: SETTING UP THE SITUATION:

An outdoor retailer who is well-established as an ecommerce presence came to us because customers were having trouble finding products on their site. They knew this was happening because particularly loyal customers had contacted customer service agents to ask where things were. They had also followed up by doing some evaluative user research, where they had tested the existing site with participants, and found that most people had a hard time finding the products they were looking for and didn't understand why the site was organized the way it was.

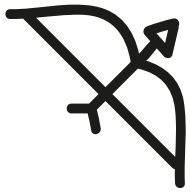
This is obviously a huge problem for an e-retailer, because customers can't buy products they can't find. It also drives up their service costs, because customers are contacting customer service more frequently. Lastly, this retailer has built their brand on being experts on outdoor activities, and customers weren't trusting their knowledge on their products, since they seemed to be located in strange, incorrect places. It was apparent that their product taxonomy needed a serious overhaul.

Additionally, the business was shifting a bit. For years, they had sold gear to hard-core outdoorspeople, who know a lot about the activities they do and the equipment they need for it. In recent years, however, they had started selling everyday gear to people who just needed a good backpack, or a pair of boots that felt outdoorsy. They didn't know anything about these new people, and they needed to get to know their new customers.

That's where we came in: to rebuild their product taxonomy, identify facets that users needed to find products (and the taxonomies that would drive them), and to figure out how to make it all more palatable to newcomers without offending their core customers. We started, as we always do, by defining our objectives.

Here's what we'll cover:

Part 2: Define Your Objectives



Doing user research at all is great, but doing it without taking the first step of getting concrete about your goals for the research is one of the most common mistakes people make. You need to figure out, in detail, what you want to know about people and get your stakeholders on board, before you even start talking to people. We'll show you how to define research objectives that will help your project succeed.

Take me to part 2

Part 3: Find Your Users

You need to decide who to talk to and how you're going to find them. After all, you can't do user research without users. We'll walk you through how to decide who the best people are for your study and the various options for finding and scheduling them. Whether you do it yourself or work with a service, you'll know what to expect.

Take me to part 3

Part 4: Ask the Right Questions

Interviewing people isn't as simple as asking them how they think a taxonomy should work. You need to turn your research objectives into questions that will help your participants give you the best information they can. We'll show you how we create discussion guides so you can interview with confidence.

Take me to part 4

Part 5: Interview Like an Expert

Talking to people is by far the most nerve-wracking part of doing user research for most people, but it doesn't have to be, and you don't have to be perfect at it to get great data for your project. We'll take you through how to run your interview, detail by detail, so you'll both feel at ease and you'll get all the information you need.

Take me to part 5

Part 6: Analyze Your Findings

After you have your data, you have to figure out what it means and how you can use it: that's where analysis comes in. We'll show you three ways we do thematic analysis at Factor, from the fastest and easiest to the most rigorous and productive, and help you choose which technique is right for your project.

Take me to part 6

Part 7: Build Your Taxonomy

Finally, it's time to build your taxonomy! Even the simple user research techniques we discuss here can reveal insights that are immensely valuable to the taxonomy development process. We'll show you the three key things to look for, and how to turn them into better taxonomies.

Take me to part 7

Part 2

Define Your Objectives

We always start off a research project by deciding what our objectives, or goals, actually are. What do we really need to find out? If we could wave a magic wand and know anything about our users, what would it be?

Why do you need research objectives?

Objectives help you focus on the things you really need to learn, so your study leads directly to actionable information. Documenting them also means that you can validate them with stakeholders now, rather than after you've done the work and they are questioning your findings.

How to determine your research objectives

To help you identify your true research objectives, here are a few questions to ask yourself and your team:

- When this research is done, what questions should you be able to answer about your users?
- What triggered you to think about doing this user research in the first place?
- What is it that you need to know about users in order to move forward with your work?

> You might be nervous about this project getting sunk before you even start, if somebody has different ideas about what your research objectives should be. If someone important disagrees with the fundamental questions you're trying to answer, though, they won't be convinced, no matter how good your data is. This is a really good opportunity to figure out what they want to know and do a bit of negotiation around what makes it into the study. Oftentimes, a stakeholder who isn't sold on the idea of research can be won over by including one of their questions.

WORKSHOPPING RESEARCH OBJECTIVES

Good research objectives for the kind of research we're talking about in this guide are: Open-ended, finite, addressed by the kind of study you're planning to do, and directly applicable to taxonomy. To make these guidelines clearer, let's look at some examples of bad research objectives:

01 *Determine if socks should be placed with clothing or with shoes in our product taxonomy.*

By only presenting two options, you're limiting your findings from the beginning. What if your users really think they belong in accessories?

Better: Determine where socks and other hosiery fit in our users' mental models.

02 *Analyze how our employees interact with information.*

All employees? All information? Ever? In what ways? This is a huge question, and way beyond the work of one study.

Better: Identify which information sources underwriters need to access on a regular basis and what they need to do with those sources.

03 *Assess the usability of our faceted navigation.*

This is a great objective for a usability test, but it's not really addressed by the kind of generative research we're talking about here. Are you sure you're offering the right facets? Are you sure the taxonomies are addressing the issues the users have? If so, then absolutely, do a usability test. This objective needs a different tool.

Better: Determine users' needs and expectations around faceted navigation and other hosiery fit in our users' mental models.

04 *Identify the touchpoints, content delivery mechanisms, and brand interactions that make up the user's journey.*

These are really important things to know about when you're doing any kind of service design or user journey mapping, but most of them aren't directly applicable to taxonomy, without a fair bit of other work.

Better: Understand the key pieces of information users need to find the right document.

CASE STUDY: DEFINING OUR USER RESEARCH OBJECTIVES

We knew what the company needed based on our early talks with stakeholders there:

- Get better at connecting people with products.
- Expand the universe of potential customers.
- Maintain the trust and patronage of experts.

Based on that, what did we need out of the research? In consultation with the stakeholders, we decided in order to build the new navigation taxonomy we needed to:

- Identify patterns in how customers make decisions about outdoor gear, learn about outdoor gear, and ultimately, choose to buy outdoor gear online.
- Surface the information needs of non-experts as they learn about outdoor gear.
- Understand the language that non-experts use to think about and describe outdoor gear.

We needed to know how customers buy outdoor gear so we could make sure we were giving the customers all the information they needed in order to make a purchase, in the way that was most useful to them as they followed their normal buying patterns. We also decided we needed to know a lot more about non-expert users: What kinds of language did they expect to see? How did it differ from people who knew a lot about their activities? What kinds of help do they need from a retailer to be able to choose a piece of gear?

We discussed this with the project stakeholders, decided we were all on the same page, and then moved on to crafting the rest of the research plan, starting with who we were going to talk to.

Part 3

Find Your Users

There's no user research without users, so you have to find some people to talk to. It's worth taking a moment to be strategic about it and make sure you're getting the best participants for your study.

Who do you want to talk to?

After you know what you want to find out, you can decide what kinds of participants will be the most helpful. As you come up with your ideal kinds of participants, try to avoid getting too specific. Often, clients will come up with a wish list of demographics, behaviors, and buying patterns that is both difficult to find in a random sampling of the public and isn't actually helpful, because it's much narrower than their actual user base.

If you're working on an external project, don't limit it to current customers, but be sure include the kinds of people you'd like to be your customers, also. Why aren't those people using your services or buying you products? You may learn a lot from them.

On internal projects, you don't have to limit your pool to everyone to the same department or in the same roles. It can be useful to talk to someone who works with a tool regularly as well as someone who trains other people on it, and someone who just learned it.

> Particularly with internal projects, people will try to be nice to you and get you the person who knows the most about the system, has been there the longest, or is the best with the process. Thank them nicely, of course, but firmly refuse: you'll get much better information from people who are just learning the system, are still confused about their jobs, or are new to the domain. They haven't been brainwashed by the current state yet, and they know how it really works, not how it's supposed to work. If you want to know what conditions are like on the ground, talk to the foot soldiers, not the general.

How many participants?

Try for four, there's really no need to do more than twelve. Two are better than nothing. One is dangerous, because it's not really "user research" it's just "Lisa," and you don't have enough data to show you patterns.

CASE STUDY: CHOOSING OUR USERS

Who to talk to? We decided that, in order to support our research objectives, we really needed to talk to both experts and novices. The experts would give us a baseline for what our client ought to be excelling at already, and the novices would tell us the direction we needed to go.

We hypothesized that people who were fairly new to outdoor activities may be having more difficulty using the site and the product taxonomy, because they wouldn't even have knowledge of the domain to fall back on. As a result, we decided to weight the participant assortment toward novices. The client wanted to make sure we got a fairly wide sampling, so we planned sessions with twelve participants, so we decided to look for four experts and eight novices.

Finding the right people

Recruiting is the process of finding volunteers who want to be part of your study. This is the first step in identifying who you're going to be speaking to. There are two basic ways to conduct recruiting: by doing it yourself, or hiring a third party to do it for you.

You can do it yourself

You can always try to do your own recruiting, but we recommend it if:

- You're doing a very small study, or
- The participants are a captive audience, like your coworkers or your client's employees.

If it's a manageable number of people from an audience you can easily tap into directly, then doing your own recruiting is fine. Keep in mind that when you do your own recruiting, you have to:

- Find and contact possible participants (If you're doing an internal study of your co-workers, this will be easy. If you're trying to find a particular type of Millennial skateboarder to interview them about their skateboarding habits, this part might be hard.)
- Determine their eligibility
- Schedule a time for them to be interviewed
- Follow up with them prior to the interview to confirm they will show up
- Contact them if they don't show up and reschedule them
- Find new participants to replace the ones that didn't show up (really, there's always one)
- If using, distribute gratuities to the participants after they complete their participation

You can certainly decide to do your own recruiting for a larger study, but be warned, it's an entire project by itself. Unless you love spending hours scheduling interviews, juggling calendars, and managing gratuities for a large study, we recommend letting an expert recruiter do this legwork for you.

Or you can get professional help

We really recommend using a recruiter when:

- You want to talk to more than five people
- You have strict parameters for recruitment
- You're pulling from an audience you don't have direct access to.

Recruiters come at a cost (typically, with a charge per participant, a flat project management fee, and a fee per participant to distribute the gratuity), but for a large study, they're invaluable. They will email participants the night before to remind them to show up, call participants who don't come to their appointment, and handle rescheduling them or finding new participants as needed. We also recommend having them mail out the gratuities, if you're using them.

> We've mentioned gratuities a few times, but it may not be clear why yet. When you're trying to get people who aren't a captive audience to participate in a study, you usually need to offer them something in return. For a one hour study, anything between $50 and $100 is usual, and it is usually distributed in the form of a generic gift card. If you use a recruiter, they should be able to provide these and distribute them for a nominal fee. If you're working with internal participants, enthusiastic thanks are usually enough.

CASE STUDY: WHAT KIND OF RECRUITING?

For our study, we used a national recruiter to help us identify, screen, and schedule participants. Because we wanted to talk to members of the general public, they pulled names from their database and made sure they represented a broad demographic sample.

Screeners

A screener is a set of questions that you use to find participants who are highly qualified for your study. You can use a screener to narrow in on demographic targets, audience segments, or particular use-cases. You can use a screener to limit to a very particular use-case, or to make sure that you equally fill a variety of use-cases. For example, in one study, we needed to talk to people who aren't in a creative job role, but use software to create visual media sometimes. The screener helped us to narrow in on that very particular use-case.

When do you need a screener?

You should always use a screener, unless you can confidently say that anyone you recruited would make sense for the study. If you're working on an internal project, you can probably rely on your own or the client's knowledge of their own people to pick the best participants, with a bit of general guidance. For most external projects, you will want to use a screener to validate participants.

How to write a screener

Start out by deciding what characteristics would make someone a good participant. Write out these qualities and use them to construct simple questions. A screener is easiest to use when there's no room for interpretation, so you're looking for multiple-choice questions, not essays.

For an internal, or less formal project, you might just ask someone a few questions via email to make sure they're the right participant, or check with a stakeholder to make sure that the participant actually manages content, uses the system in question, etc.

CASE STUDY: WHAT KIND OF RECRUITING?

We wanted people who were interested in outdoor activities, but not experts. In the screener, we asked them these questions:

1. Do you consider outdoor activities to be a hobby of yours? (For clarification, examples of 'outdoor activities' might include skiing, snowboarding, backpacking, hiking, camping, etc.)

    a. Yes
    b. No (Thank and disqualify)

2. What outdoor hobbies do you engage in?

    a. Skiing
    b. Snowboarding
    c. Backpacking
    d. Camping
    e. Hiking
    f. Biking
    g. Running
    h. Other: (list)

3. What level of experience would you say you have with your preferred outdoor activities?

    a. Beginner/novice ("I am just getting started")
    b. Mid-level ("I do it occasionally")
    c. Experienced ("I have been doing this for a long time"/ "I spend a lot of time doing this") (Maximum 4 participants)

In this screener, we used a technique that's fairly common for us, where we ask a few questions that aren't necessarily to disqualify participants, but to give us some information about them before we begin, so we can steer the interview a little bit better. We weren't going to include people or not based on what outdoor activities they engaged in, but it made asking the questions a bit easier if we knew that about them beforehand.

Part 4

Ask the Right Questions

If you're following this process, you should have a pretty good idea of what you want to ask participants about already, since you'll have thought about your goals and who the best people are to address them. We always collect these questions in a discussion guide and use that to drive the interview.

Using a discussion guide

A discussion guide is the set of questions you plan to ask a participant. We purposely don't call it a 'script', because this kind of contextual inquiry works best when it feels like a conversation, and scripts don't work very well when you're trying to have a conversation. If you stick too closely to a script, the interview feels, well….scripted. This keeps the participant from speaking to you openly and naturally.

A discussion guide allows you to float between questions and themes, and follow the participant where they take you in conversation. Think of it as a set of milestones you are trying to reach while in an interview.

How to write one

Go back to your research objectives and determine, based on these objectives, what you need to ask your participants. Good prompts for a discussion guide will have just enough detail to provide you with safety net, but won't dictate the entire conversation. We also like identifying what the user goal for each prompt should be (What should they be trying to do in response to your question?) and the test goal of asking that question (What's the point of including it?). Making sure those goals are front-and-center in your mind will help you keep on track, even as you improvise.

For an hour-long interview, identify eight to ten prompts. Depending on how chatty the participant is, you may not get through all ten each time, and that's fine. Focus on getting good information out of each one, not hitting every single question.

CASE STUDY: CREATING A DISCUSSION GUIDE

To prepare for our interviews, we wrote a discussion guide that included the following prompts and goals:

Prompt & Follow-ups	User Goal (What you want to get the participant to talk about)	Test Goal (What research objective or question does this answer?)
Tell me a bit about yourself - what outdoor recreational activities are you interested in? How did you get into that activity? What got you started? Have you purchased gear or apparel for this activity? If so, when you began buying gear or apparel for this activity, how did you get started learning about what you need?	Explain activity interest, experience, and expertise.	Surface information behavior around starting a new activity; surface pain points and barriers to learning about a new activity.
Think about the last time you bought gear for [whatever activity participant named]. What resources did you use to learn about that gear? Who do you seek opinions from? Is this how you usually learn about gear? Does your research change, depending on what you're looking for? i.e., do you have a different process for researching pants than for researching, say, kayaking gear?	Explain how they learn about gear and apparel.	Surface referents and resources for getting into a new activity; surface the researching process.

Part 5

Interview Like an Expert

Expert interviewing is an art, and people spend careers perfecting it, but it's relatively easy to become good enough at it to get useful information. The most important thing, of course, is just to do it. Practicing is the best way to learn, but we also have some guidelines.

Start off right

It doesn't matter whether you feel nervous; when you're interviewing, you're 100% invested in the person you're talking to. The introduction is by far the most talking you'll do, and it's the time to set the tone and make your participant comfortable. Start the interview off by being very clear and reassuring about what you're doing, because not everybody understands the idea of user research. We always make sure to say:

- I'm not here to evaluate you; you can't make a mistake.
- I didn't build any of this; you won't hurt my feelings.
- This will be confidential; nothing you say will be attributable to you.
- I'm going to record this for my notes; is that okay?

LESS TALKING, MORE LISTENING

1. **Let your participant lead the conversation.** Even if they're veering into a digression, gently steer them back toward what you're interested in via follow up questions. The key to good data is to keep people talking, and the key to keeping them talking is to make them feel comfortable. They can't feel comfortable if they feel wrong because you abruptly changed the subject.

2. **Don't interrupt your participant, even if you think you're being helpful.** If your background is in librarianship, as ours is, it can be excruciating to not help someone who's struggling or mistaken. Be strong and resist! You'll learn much more from what they think is going on and how they think it should work than you will from teaching them.

3. **Play the know-nothing.** There's an old trope in comedy teams, where it's one comedian's job to not know anything about the situation, just ask questions and react to the answers (the classic Abbott & Costello sketch, "Who's on First," is one of these). As an interviewer, you need your participant to explain everything. No, you've never used that website before. Wow, is that how you search for something? The more you let them tell you, the more you'll learn.

4. **Embrace awkward silences.** People tend to speak in paragraphs, and if you speak up every time there's a silence, you're disrupting their line of thought, and missing out on some valuable insights. We like to leave about ten seconds of quiet before we move them onto the next question.

5. **When you do talk, always ask people to expand, rather than assuming you know what they mean.** Our personal favorite phrases to do that are, "Tell me more about that…," "Unpack that for me…," and "Tell me what you mean by that."

6. **As they answer your questions, get your participants to be specific.** People will often want to tell you what usually happens, or how it ought to go. The problem with this is that people tend to smooth off the rough edges when they make generalizations, so they're likely giving you a more logical version of events than is realistic. Get them to show you exactly how they did it last time, or how they'd handle a similar situation again.

Take problems seriously, not solutions. Participants will often draw your attention to a problem they have, and then immediately offer a solution, like, "It's so hard to find what you're looking for in this list, if it were alphabetical it would be easier." That's a good thing to know: The user finds this list difficult to use; you should ask a follow-up question if they don't expand. Always take their concerns seriously, instead of writing them off as a lack of training or aptitude. You don't, however, have to take the solutions they offer at face value. That list might be twice as long as it needs to be, or maybe it isn't even the right list at all. Participants often offer you a Scotch tape solution, but you're better off addressing the underlying problem.

In person or remote?

You can get great data from both in-person and remote studies, and which you choose depends on where you and your your users are. In-person user research tends to be thought of as the best option, if you can afford it, and it's certainly a good option, but don't discount remote research. On most large projects we do, we choose to do remote research, but you can choose the best option for your needs.

CASE STUDY: STUDY DESIGN

We wanted to get a variety of participants from all over the country and observe how they shop for outdoor gear in their normal lives, so we chose to do a remote study using screensharing software.

In Person Studies

PROS

- You get to see your participants' facial expressions and develop a rapport with them.
- You can observe participants using mobile devices or no devices at all.
- Maintaining a conversation is much easier, since you can observe your participant's body language.

CONS

- You need to set up a lab for them to come to or determine how to record in the field.
- You're limited to people who will take time out of their day during working hours, usually.
- Any note-taking or observing is much more conspicuous and can make participants feel self-conscious.

Remote Studies

PROS

- You can talk to participants anywhere in the world, in their natural context.
- You can observe them working on their own equipment and record it more easily.
- Usually cheaper and requires less investment in a setup.
- Recordings are often easier and higher quality, with less equipment.

CONS

- You have to rely on voice cues for how your participant is feeling, which is often difficult.
- Interviews can be derailed by connectivity issues, software issues, or recording glitches.
- You will only get fairly technology-savvy participants, who own devices and are able to screenshare on them.
- Whatever you want participants to interact with needs to be generally available on the internet, which may be impossible for sensitive materials.

Keeping records

No matter how small or informal the study, we recommend capturing the data both as a recording and with notes. Use the notes to do your analysis and come up with your findings and the recordings to supplement your findings with evidence. If it's at all possible, have another person observe the interview and take notes. It's much better than doing it all yourself, not only because you get to focus on the participant instead of note taking, but also because they'll likely notice things you won't and can contribute to the analysis (discussed in Part 6).

If you can't have a dedicated note taker, you can take notes for yourself, either in the moment or from a recording. Even if you're planning to return to the recording later, jot down the big things you notice as the participant talks; it's hard to keep that fresh perspective after the fact. If you're interviewing people in person, take notes by hand, as keys clacking and having a screen between you draws too much attention to the fact that the participant is being observed and can make them uncomfortable.

For in-person studies, a smartphone makes an excellent audio recorder. We've used the recording function in Evernote very successfully. You'll usually want participants to show you how they do things, which is a challenge for in-person non-lab-based interviews, and might just require extra-good notes.

For remote studies, most meeting technologies like GoToMeeting or WebEx will let you do the basics of letting a participant share their screen with you and recording it. We've explored fancier, research-focused technologies for years and still return to GoToMeeting for sheer convenience.

> If you have lots of funding on a project, you might be tempted to hire a service to transcribe the audio on a project. We've done it on some projects, and we aren't convinced that it's worth the time and expense. It's very useful for capturing quotes (or "verbatims," as they're called), but a transcription doesn't replace the kinds of thoughtful observations and pattern recognition that's the most useful when it comes to analysis.

What makes good notes?

Our notes often look like this. Not pretty, but extremely useful.

Segment	Date	User	Session scheduled start time	Video timestamp	Video start time	Timestamp Command+shift+colon	Question/Topic	Notes
Expert	8/8/2016	1	3:30 PM	0:00:24	3:36 PM	3:36:34 PM	What activities do you do?	Cyclist, road, mountain, state and national parks, fishing occasionally, maybe some whitewater rafting, also team sport. How long? Active in sports since high school and college, focusing more on biking these days.
Expert	8/8/2016	1	3:30 PM	0:00:24	3:36 PM	3:36:34 PM	How long have you been mountain biking?	25+ years
Expert	8/8/2016	1	3:30 PM	0:01:27	3:36 PM	3:37:37 PM	How did you get into mountain biking?	how did you get into it? friends were into it, it was a natural progression
Expert	8/8/2016	1	3:30 PM	0:02:12	3:36 PM	3:38:22 PM	How did you figure out what you needed?	Friends had certain things, so I figured out what I needed from that, went to a bicycle store in the area, gave them a price range, got advice. Similar types o brands to friends.
Expert	8/8/2016	1	3:30 PM	0:02:51	3:36 PM	3:39:01 PM	How do you choose?	Got some initial reference points from friends, price points, sorts of things he needed. Very early internet research.

When you're taking notes on an interview, you want to focus on three key things:

1. Detailed observations of what the participant actually does. What search terms do they use? Where do they go? Let them show you, not tell you, and look for the implications.
2. Quotes of what they say, or "verbatims." Get these as precisely as you can, because evidence in a user's own words is extremely valuable. These are some of the best notes to sort in a thematic analysis, also.
3. Larger patterns or themes you notice. These can be paraphrased based on things they say ("Wants to see all possible things at once"), things they do, ("Always searches first"), or things they don't do ("Doesn't realize the facets are there.")

People speak quickly, so focus on getting it all down as efficiently as possible, and don't worry about typos.

We take notes in a spreadsheet, like the one pictured above. Ours has some bells and whistles that yours probably won't – like detailed timestamps that make it easier to find video clips later – but you can take what you need from it. The basics are just:

1. The participant ID. This can be a number (like we have here) or the participant's first name, as long as it's as anonymous as you need it to be.
2. The note itself. What's the observation? Focus on the three types of notes above.

That's it. If you want to get more detailed, separate out topics or questions and their answers, like we have here. It's a tiny bit of extra work in the moment for the note taker, but it makes doing a thematic analysis later much easier.

Part 6

Analyze Your Findings

While there are many ways to analyze data, we're going to use this space to dive into our favorite method: thematic analysis. Thematic analysis is the process of finding useful or pertinent themes in a set of qualitative data. By working through observations to see what themes arise, we can identify patterns of behavior and information needs which we can use to make evidence-based decisions.

Choose your level of rigor

1. A fast and loose collective brain dump
2. A somewhat-structured closed card sort of notes and observations
3. A rigorous open card sort of findings

1. COLLECTIVE BRAIN DUMP (FAST AND LOOSE)

Good for:

- Identifying large and obvious themes quickly.
- A very small study (3-5 people)
- Subjects that you're very familiar with (little translation or interpretation needed)

Avoid if:

- This is an area that you and your team don't understand well
- You're very close to the subject and need to worry about injecting your own biases into the findings
- You need to have well-documented evidence for your conclusions

It works best with as many researchers as possible, because you are relying on everyone's individual notes and memories to generate content for the whiteboard.

How to do it:

1. Gather your individual notes and re-familiarize yourself with what happened during the interview sessions (hopefully you all took good ones)
2. Get 2-3 members of the research team in a room together.
3. Discuss what you remember from the sessions. What patterns emerged? What stuck out? What was particularly surprising, or predictable?
4. Write these themes on the board, and flesh out your thesis statements about each theme. A thesis statement includes:
    - The observation, or finding (what happened).
    - The implication (what should be done, given what happened).

Time investment: 1-2 hours, depending on the size of the study.

2. CLOSED CARD SORT STYLE (SOMEWHAT STRUCTURED)

Good for:

- A study with a strong set of objectives
- Five or more participants
- Research where you have good notes from the sessions
- A domain with which you're fairly familiar
- Situations where you need a good record of which observations answered which questions

Avoid if:

- After doing research, you're not sure your objectives were the right ones, or you worry they might be limiting you
- It's a very contentious topic, and stakeholders might disagree with the primary research questions
- You're doing something brand new, and you need big ideas

It works best with 2-3 people working together on analysis.

How to do it:

1. Gather your detailed notes from the sessions — possibly even transcriptions if you have them
2. Create note cards out of your notes, with one observation per note card..
3. Write your original objectives or primary research questions on post-its and put those up on the wall/board as your headings.
4. Map your observation note cards to each of those objectives, creating clusters of note cards under each post-it heading. What are the answers to your research questions?

This process goes much quicker than option 3 when you're working within a familiar domain, because your findings shouldn't require a lot of interpretation. This is an especially useful way to go about analyzing when you're in the middle of a series of projects dealing with the same domain and similar audiences.

Time investment: 1-2 hours for a small study (4-6 participants), up to 4 hours for a larger study (8-12 participants).

3. OPEN CARD SORT STYLE (MOST RIGOROUS, MOST RELIABLE)

Good for:

- Truly generative research, when you need fundamental ideas about how something works
- When you're trying to identify a problem out of a morass of patterns of behavior
- A study that had particularly surprising results
- When you need really solid evidence for any conclusions you might make
- Situations where you need to ensure as much objectivity as you can

Avoid if:

- Your time is limited
- You don't have enough people who are familiar with the sessions
- Your notes aren't very good

It works best with 3-4 people doing the analysis.

How to do it:

1. Get your team together in a room with lots of empty wall space. Turn your detailed notes into observation notecards, with one observation per notecard. Note: This process requires very accurate notes.

2. Take your observations and start clustering them on the walls, like an open card sort. Put like notes together, and see what themes arise out of the clusters.

3. Identify a single thesis statement for each theme. A thesis statement includes:
   - The observation, or finding (what happened).
   - The implication (what should be done, given what happened).

Time investment: 30 minutes per participant (this will change depending on your experience and how many participants there actually were). We assume it takes at least 6 hours for a study of 12 people.

If you are having trouble writing a complete thesis statement about a theme, then reconsider the cluster. The purpose of a theme is to identify an actionable implication for that pattern of behavior. So, if you cannot easily identify an implication, it's possible that the cluster you put together is not the real pattern. Sometimes it's like looking at a Magic Eye Puzzle, where you have to step back, cross your eyes a little, and adjust your perspective to see what's really going on!

CASE STUDY: FINDING OUR THEMES

After talking to our twelve participants, and doing an open sort on the observations, we codified our findings into a report for our client. It had the themes we had identified, example quotations from the participants as evidence, and specific proposals for what we were going to do with that information.

Theme: Participants avoided using facets until they had developed some preliminary domain knowledge, or had gotten familiar enough with what was available to feel comfortable applying filtering mechanisms. Participants are initially trying to get that domain knowledge by scanning large lists of products.

- Participants initially used search to get an idea of what's available in a category, then narrow from there. Searches typically result in product list pages, which users can scan, scroll up and down, paginate through, and get comfortable with before applying any filters. In this study one participant narrated as she went through this process: "I would go in through 'All Footwear'. [Clicks on subcategory Women's Running Shoes]. I want to see what this store has, I wouldn't narrow it down any further [using facets]...I usually just look at my size, and sort it [price] lowest to highest, just because I love a bargain. Then I start scrolling down to see what I like. I usually go up and down a million times" (Participant 5).

- After some preliminary research to understand what's available and what's in the domain, participants employed facets to narrow down viable candidates. One participant explained that they may, after looking through a long list of products, come back to apply the 'Recommended Use' facet in order to narrow down the list (Participant 2).

Theme: Participants used 'spearfishing' behavior (diving in and out of multiple product detail pages) to learn about the domain and develop a basic understanding of the product category. Participants also explained that through this behavior they are trying to understand what the major value breakpoints of the domain are, in order to determine how much they should spend for their particular use case.

- As one participant explained, "Having the bigger list helps me narrow down my research and narrow down how I'm going to make my purchase. Because, especially with something I haven't purchase ever, I don't really know what those options are, so being able to see multiple things helps me determine what my preference really is and what I might be drawn to buying. Since this is my first daughter, I've never had to buy a toddler life jacket before, so being able to see all the different styles is actually really helpful" (Participant 6).

Theme: The amount of research a participant conducted depended on the size of the purchase, and their relative familiarity with the product domain. Participants researched gear differently than apparel, with an emphasis on specifications for the former, and material, feel, and fit for the latter.

- One participant explained that their level of research "Depends on the price and the level of complexity. Shorts are really simple, people are going to like it or not. Price point's so low that it's not that big of a deal. Something like a new bike is a much bigger deal, size, technology, figure out what's right for me. Might spend two weeks researching that" (Participant 1).

- Another participant had similar comments to add: "It's definitely different for a jacket [versus a bike]. A jacket, if I'm buying a certain brand that I've bought before, I pretty much know it's going to fit and I can be comfortable in that... Obviously with a bike it's a lot different. The look could be exactly what I want but then it just doesn't fit me right. I have to go to the store and sit in it, see how everything works. Even if I bought the same bike, made by the same company, I still have to try that out because it's a bigger purchase, it's a feel thing for a bike" (Participant 3).

Part 7

Build Your Taxonomy

As we know, part of taxonomy development is an art, and part of it is a science. The themes you've identified as part of your analysis should be your major touchstones as your creative mind churns on how you're going to approach this design process, but you can also look for specific details from your themes that will inform development, in this order:

01 WHAT ARE YOUR TAXONOMIES?

First, look for the axes on which users want to pivot, because these are the taxonomies you need. So frequently, a client comes to us and says, "I need a taxonomy," and that's fine, I can always build you a taxonomy. But really, the client almost never needs just one singular taxonomy that they already know the domain for.

So do a check here: do your users need the taxonomy you thought they did? Do they actually need more than one? Is it best to build one overarching subject classification, or several smaller value lists that users can use to triangulate in on content? If you're not sure yet, the next question should help.

02 WHAT KIND OF STRUCTURE?

Next, look for how your users want to interact with the content or items the taxonomy —or taxonomies— will be used for. We find that these are easiest to remember and act on when they're framed in terms of user goals and tell a story.

What do your users need to do? How do they need to be able to do it?

Do they want to scan a bunch of it at once and decide based on comparison? Do they want to be able to narrow in on the most specific thing? The first suggests a shallower taxonomy structure, with many items all at a leaf node. The second suggests a deeper, more detailed taxonomy, with few items at a leaf node. Neither of these structures is inherently better than the other; it all depends on what your people need.

03 WHAT ARE YOUR TERMS?

Finally, look for the actual language they use, because that will form the user warrant for your terms. This is the part of the exercise that most taxonomists will probably be the most comfortable with, and good notes and a thematic analysis give very deep, rich data to support all of your diction decisions. Do think about the taxonomies themselves and the structure first, though, because they may change how you these findings.

CASE STUDY: DESIGN DECISIONS

The themes we pulled out in our thematic analysis helped us make some decisions as we worked on a revised navigation taxonomy.

Firstly, both novice and expert users expected some sort of a product taxonomy for the main navigation, and they all found the product taxonomy difficult in its details and usability, not in its conceptual domain. While we expected this (being an ecommerce site), it was still good to validate it. We also decided that it made sense for the client to put more effort into developing and maintaining facets for technical gear rather than clothing. We identified a number of these facets, based on information users were observed looking for, and kept an eye out for others as we worked.

Next, the 'spearfishing' behavior that novice users exhibited about products made us decide that the product taxonomy should be relatively shallow. It wasn't helpful to delve into details like "3 season tents" in the product taxonomy, since users needed to be able to look at all tents and get a sense of what made them different. Instead, information like seasonal suitability should be moved into a facet. We also decided, because novices became overwhelmed by details more easily, that the facets should be listed with the conceptually-simple, ecommerce-standard ones at the top, and gradually become more complex as the user scrolls down.

Lastly, we looked particularly for key terms that resonated with both experts and novices. They were all fairly standard in their conception of "gear" vs. "clothing," with similar ideas about the overlaps and differences, which meant that "gear" in particular was an acceptable term to use, if we needed. We also decided, based on the research, to move technical language toward facet values and away from the product taxonomy, to make it more hospitable to novice users.

Your users stay with you

When you follow this process, you end up with a set of very concrete answers to your research questions, which, if you've constructed them correctly, ought to give you the information you need to design your taxonomy. It also gives you a visceral sense of how people work and what's important to them, which can't help but inform the design decisions you make. When one of your stakeholders proposes an idea, you can identify the ones that are right for your users, or clearly explain why that would hurt their experience. You'll be able to definitively say,

> "No, our users need to be able to get context by looking at a bunch of products, and then narrow it with facets. We can't make them drill down to a specific category with a product taxonomy, that won't give them the information they need."

Or, conversely,

> "For our users, more clicks isn't worse, they're working through a decision-making process as they navigate the taxonomy. They need to be able to get very specific, and it's okay if it takes a minute."

The clarity of purpose that this information gives you as you design is immeasurably valuable. The benefits are immense:

- It gets you a faster, easier taxonomy development process (because you know what your taxonomy needs to do and who it is for).
- It means it's easier to resolve disagreements about the taxonomy (because you can go back to hard evidence about what people said and did).
- It means that v1 of your taxonomy is much more likely to work (because it's based off of real information, rather than assumptions).
- And if your project is internally-facing, it gets you immediate buy-in (because people feel heard and like they've had a part in it).

Part 8

What Next?

Whether you're brand new to taxonomies or you've been creating them for years, you've learned some of the key methods for integrating user research into your process and using it to make taxonomy projects more successful.

What we've covered:

- You don't know as much as you think you do about users: why you need to do user research (Part 1)
- 4 characteristics of good research objectives, and how to use them to guide your process (Part 2)
- How to decide which people to talk to, and how to find the best participants (Part 3)
- How much you need to prepare for an interview and what kind of questions to ask (Part 4)
- Techniques for interviewing participants that will put them at ease and get you great data (Part 5)
- 3 options for analyzing your data and how to choose the right option for your study (Part 6)
- How to translate findings into design principles for your taxonomies (Part 7)

What's next?

Start doing some research! To get you started, we've outlined four example research projects to base yours on, depending who your participants are and how rigorous you need to be:

Internal Users

Informal

A quick way of getting information about employees in your building

Method:

- Identify and socialize research objectives with stakeholders
- Talk to stakeholders to identify the best participants
- Get a project manager to help you schedule four to eight participants
- Interview participants at their desks, using your smartphone to record
- Take notes by hand
- Enlist a friendly stakeholder to bounce ideas off of while you whiteboard
- Extract needs and design principles for taxonomies from the whiteboarding as you go

Timeframe: 1 week, minimal time investment.

Formal

A more rigorous way to get higher-stakes information on a distributed team

Method:

- Identify and socialize research objectives with stakeholders
- Identify characteristics of good participants, cast a wide net to find possible participants
- Create a screener, enlist the help of a PM to screen and schedule eight to ten participants
- Interview participants remotely, using screen-sharing software to view and record
- Have a notetaker with you, taking notes in a dedicated spreadsheet, as well as an observer
- Print cards out from your sessions, and do a closed sort on them, mapping observations to your research questions
- Create a theme for each group, usually constructed as the answer to a research question
- After themes have been extracted, confer with stakeholders and SMEs to codify them as taxonomy needs design principles

Timeframe: 2-3 weeks, moderate time investment.

External Users

Informal

A way to refine information about an already well-understood group of users and support a small taxonomy change

Method:

- Identify and socialize research objectives with stakeholders
- Talk to stakeholders to identify what kinds of people you want to talk to
- Reach out on social media to recruit participants, ask if they have 30 minutes and can dial into a screen share
- Record using the screen sharing software, and take basic notes on your computer
- Email codes for gift cards to participants after the interview
- Enlist a colleague or friendly stakeholder to bounce ideas off of while you whiteboard
- Extract needs and design principles for taxonomies from the whiteboarding as you go

- **Timeframe:** 1 week, moderate time investment.

Formal

A way to gain new information about a group of users and support a significant overhaul

Method:

- Identify and socialize research objectives with stakeholders
- Consult marketing segmentation and business goals with stakeholders to identify what kinds of people you want to talk to
- Create a screener, based on these criteria
- Enlist a recruiting firm to find, screen, and schedule participants
- Provide participants with a screen share to log into, and a contextualizing email ahead of time
- Record using the screen sharing software
- Have a notetaker with you, taking notes in a dedicated spreadsheet, as well as an observer
- Print cards out from your sessions, and do an open sort on them, identifying themes as you go
- After themes have been identified, choose and extract the best video clips to use as evidence with stakeholders
- Using the evidence from interviews, present the themes you found to stakeholders and SMEs, and work with them to codify themes into taxonomy needs design principles

- **Timeframe:** 3-5 weeks, significant time investment.

If you've caught the research bug

These aren't specifically about user research for taxonomy practice, but they have useful perspectives on user research:

- Baxter, K., Courage, C., & Caine, K. (2015). *Understanding your users : a practical guide to user research methods*.
- Bolt, N., & Tulathimutte, T. (2010). *Remote research : real users, real time, real research*. Rosenfeld Media.
- Hall, E. (2013). *Just enough research*. New York New York: A Book Apart.
- Portigal, Steve (2013). *Interviewing Users*. Brooklyn, N.Y.: Rosenfeld Media.
- Rubin, J., & Chisnell, D. (2008). *Handbook of usability testing : how to plan, design, and conduct effective tests*. Wiley Pub.
- Tedesco, D., & Tranquada, F. (1992). *The moderator's survival guide : handling common, tricky, and sticky situations in user research*.
- Young, I., & Veen, J. (2008). *Mental models : aligning design strategy with human behavior*. Brooklyn, N.Y.: Rosenfeld Media.

More questions?

Want to talk through your next research project? Want more information on how we do it? Get in touch!

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Colophon

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