



# Video Transcript:

## Research Questions, Hypotheses, and Variables in Communication Research

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### ENGLISH TRANSCRIPT

**Elizabeth:** [00:00:00] Hey, everybody. I'm Elizabeth Dubois and I am your professor. Today we're talking about research methods, hypotheses and variables. Research questions and hypotheses are the anchor of most academic research. They tell your audience what you care about and hint at how you're going to go about collecting and analyzing evidence. Good research questions and hypotheses immediately tell you what variables you're focusing on and how you think they might be related. We'll talk about conceptual and operational definitions for variables in qualitative and quantitative settings. So let's dive in.

**Elizabeth:** [00:00:34] As social science researchers, we're trying to understand phenomena in the social world. We want to understand how different things interact. For example, how does news media choosing to cover one issue over another impact how much the public cares about that issue? We might observe that our friends all start talking about the same thing at the same time, and we wonder if the news media covering it sparked that. But, our anecdotal evidence that our friends all started chatting about it at the same time news covered it isn't enough. We need to systematically test the relationship between what the public thinks and what the news media is reporting on. So, we develop research questions or hypotheses to guide our systematic investigations. Good research questions and hypotheses are clear and concise. They're answerable. They're relevant to our topic and feed back into existing literature. They also identify the key things we care about - our variables - and they indicate what kinds of relationships we're curious about between those variables.

**Elizabeth:** [00:01:42] So what exactly is a variable? Well, at its simplest, it's a thing, element, or feature that can vary or change. In the news media example, our variables would be: amount of news coverage for a given issue, intensity with which the general public cares about a given issue. And we might add a third variable of: which issue is being covered.

**Elizabeth:** [00:02:05] Let's take it to the basics for a moment. Imagine a class full of students. Each student has hair, a shirt, pants, and an item with them. All of these different things could be variables. Take hair - we might say hair length is a variable that has the response options of being long or short. We could also look at pants and say that pants colour is another variable where you might have dark or light coloured pants. Now, we could say that we think there is some sort of relationship between hair length and pants colour. We might ask the research question, "Is [the] colour of pants someone chooses related to the length of their hair?" Or we could hypothesize that people with short hair will choose light coloured pants more than people with long hair. You can see that we've got two variables here: hair length, pants colour. Even though other things can vary ([for example] the item that they're holding, the colour of their shirt), your research questions and hypotheses are pointing to the things you actually care about.

**Elizabeth:** [00:03:10] Of course, you'd want some sort of theoretical reason to bother asking these questions in the first place. So let's take another example. Here we have a bunch of people wearing pink shirts. We might make some guesses about how their shirt colour is related to gender, for example. We know that lots of companies make pink clothing for the girls sections of stores and that stereotypes about gender presentation are extremely powerful social forces. We might hypothesize that those who self-identify as women will be more likely to be wearing a pink shirt. Well, we could count up how many people self-identify as women, and then we could count up how many pink shirts there are. And we'd probably run a statistical test, like a chi square test, to see if there's an association. But not all variables are that clear cut. We can't always just count things up to respond to our hypotheses.

**Elizabeth:** [00:04:07] So let's take this same example and imagine that it's Pink Shirt Day. Pink Shirt Day is an anti-bullying campaign that started in Canada. One day a year, people are encouraged to symbolically stand against bullying by wearing a pink shirt. So, it's pink shirt day today. Now, we might want to ask people why they chose to wear a pink shirt on this particular day. Was it related to the campaign or was it a coincidence? We could start developing a research question about community and civic engagement. So, something like, "Does the symbolism of wearing a pink shirt help build a sense of community?" Here, colour of shirt is still a variable, but the other variable that we care about at this point is "sense of community". We can't just count up the variable sense of community; we probably need to develop a qualitative research design in order to gather the information we need to respond to that kind of research question.

**Elizabeth:** [00:05:05] All right. So, research questions and hypotheses need to identify your key variables and point to the relationships you anticipate between them. But where do you find these variables? Well, we use observation, reviews of literature, and pilot studies to figure out which variables matter to us. Variables often start as broad concepts and through the research process we operationalize them. And that way, once they're operationalized, we can more easily collect data and respond to research questions and hypotheses. Back over to Pink Shirt Day: We might conceptualize the variable sense of community as a feeling of belonging and shared experiences. We come to this definition by looking at what the literature says. Then, we might operationalize it to be more specific about what we're looking for in our particular study. Our operational definition outlines what we want to know and how we will classify responses. It's very specific to the study at hand.

**Elizabeth:** [00:06:06] So imagine you're interviewing a student who wore a pink shirt. You'll get a lot of information by asking them open ended questions like, "Why did you pick this colour shirt today?" Or questions like, "Did you talk about why you wanted to wear pink today with anyone else?" Just a quick note: these are interview questions - there are items on your questionnaire. That's not the same as a research question, which is that guiding question for a large study. When you've asked these questions, you need a way to systematically analyze your answers. So you have all these questions you put in your questionnaire, you have a great conversation with the person you're interviewing, and now you have to go through those transcripts and figure out whether or not that idea of sense of community, that variable you care about, actually shows up. And, when it shows up, how are people talking about it? So in qualitative work, what we do is we look for examples of the concept that we've identified. And so sense of community might be something like saying, "Well, I decided to wear the pink shirt today because all of my friends said they were wearing pink shirts. And we all really think that anti-bullying campaigns are important and so we wanted to kind of band together to show our support."

**Elizabeth:** [00:07:23] In quantitative work, operationalizing is much more straightforward. Think about the colour of shirt. Well, conceptually, it's pretty simple. You have the idea of a shirt - it's pretty easy to agree on that, although you might have to classify whether you think a hoodie, a dress shirt, a tank top, and a t-shirt all count as a shirt. But you could come to that sort of agreement and write it out very simply - this counts and that doesn't. Colour is also relatively straightforward. Though we do need to think about whether or not the researchers are the ones who assign the labels or whether or not the person wearing the shirt assigns the label. Do we as researchers decide, "Yes, that is pink enough," or, do we let people tell us whether or not they think what they're wearing is pink? This might matter, for example, if somebody is colourblind or if somebody really wanted to wear a pink shirt but only had a red shirt and so they say, "Well, it's not pink, but I wore it today specifically so that I could be part of this community event." We also need to decide whether or not our variable has all kinds of options. So you could have a pink shirt or a red shirt, a blue shirt, a white shirt. Or, whether all we care about is: it's either a pink shirt or it's not a pink shirt. But once we think through those processes, we end up coming to our

operational definition and that helps guide the rest of our study. It's pretty easy to clarify what exactly you're measuring once you've thought through all of those different steps.

**Elizabeth:** [00:08:59] To identify, conceptualize, and operationalize variables we use literature reviews to understand what others did in similar studies and to build from their experiences. We might look at how other people define "sense of community" in order to figure out how we're going to go about identifying when there are examples of sense of community in the interviews that we did. We also think about what kinds of data we can actually collect and how we can collect and analyze those data when we're going through this process. So as we're developing our research questions and hypotheses, we're continually thinking about whether or not we can access data to actually respond to those questions and hypotheses.

**Elizabeth:** [00:09:36] At the end of the day, our research questions and hypotheses are this anchor point for our research: they're built from literature and point to our methods. That's why it's so crucial we name our key variables and the expected relationships between them right off the bat.

**Elizabeth:** [00:09:52] All right, class, that's all for today. We've talked about research questions, hypotheses, and variables. And if you want some more information, there's some added resources in the links below.