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SPEAKERS

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Hello again, everybody. Today we're going to be starting our discussion on qualitative methods. In our lecture, aptly named words, words, and more words. So for today, we're going to be talking about first, the defining features of qualitative methods. We're gonna talk about the spectrum of qualitative designs. We'll talk about some data collection techniques. And we'll get to a little bit of an primer on the analysis of qualitative data. So the thing we're going to start first with qualitative research as the defining features. And some of the defining features of qualitative research. First, start with the premise that you, the researcher, is a key instrument in the work. Unlike qualitative, or sorry, unlike quantitative research, that seeks to place the researcher outside of the research that is occurring, or the instance that is occurring that you're trying to measure. qualitative work recognizes that you can't do that necessarily. And in some instances with the qualitative work, you yourself are actively a part of the data generation, you're either interviewing individuals, or you're interpreting what they are saying. With within qualitative work, the data collection process or data generation process is much different. With quantitative data, you're observing a phenomena and you're measuring it, you're collecting data, you're doing measurements. In qualitative work, you're in many instances generating that data, you are co creating data with interviewees. You're sitting in classrooms observing instances that occur and therefore you are generating that data. Typically, qualitative work occurs in natural settings, instead of settings that would be considered lab or clinical

or even controlled settings. It's out in the field, it is traditionally field based research. qualitative work is also systematic, just like quantitative work is, except qualitative work builds in the ability to remain flexible. So certain methods can change. Sometimes even research questions can be changed depending on what occurs within the data generation process. Reach servicers are a part of that reflective process. So the researcher is actively engaged within the data generation process. There are several broad types of qualitative work that shift the type of methods that you might be using. And the type of question that you're asking will cause you to gravitate toward one type of methodology, or sorry, one type of set of methods over another. So in our first example, is narrative and narrative. qualitative work has roots in the humanities. And what it does is it focuses on an individual. And you do that through a story. And you use the story to bring some kind of understanding to that individual's lived experience. These are usually very in depth. They're very conversational, and they tend to be unstructured meaning that interviews don't necessarily have a formal form of format. going in, the researcher has some very broad types of questions that they're going to ask. But the interview is really guided toward the interviewee or what's more commonly referred to as the narrator, the participant in the research is narrating their own story. And some specific types of these types of methods are life history, or oral histories. And a further example of that is from an article in 2019, where the researcher interviewed a 24 year old man with a visual impairment to understand his experiences with physical education and how he navigates navigated those those experiences and so that was very much a narrative inquiry. It was a unstructured interview. Where the researcher just wanted to know and let the narrator let the individual with a visual impairment guide where the discussion went. Another type is an ethnography, and these methods are rooted in anthropology. And within ethnography, you are really trying to understand a culture or a cultural group. And so you're not just looking at an individual, but you're looking at what shared experiences, behaviors, values or beliefs are, or are common within that, that particular group and how that group might be different from another. It's typically where an individual researcher will immerse themselves in quote unquote, exotic cultures, that could be different from oneself. It could also be similar, right, it could be a culture that one has experienced with and therefore is much has a much better ability to navigate and interpret that culture. Within ethnography observations are typically the main way data is generated. Although researchers may also use interviews with with key members, or they may do document analysis where they will bring in different types of documents and analyze how that relates to the culture or the cultural group that they're studying. And some specific types are critical ethnography, which can be much more political, or based on advocacy, or there's even auto ethnography is where one is studying one's own culture or, or doing a self narrative about an experience. So, again, ethnography is our field based heavily in the field, you're immersed in the field, it's personalized, so you're looking very much at day to day, every ongoing occurrence and individual faces. It's often multifactorial, meaning

there's two or more data collection techniques that are employed. And ethnography can use mixed methods approach, you can bring in qualitative and quantitative methods. But we'll get to that in a couple of modules. There's usually long term commitment. So an individual tends to be in the setting or does the data generation over a number of years, it's inductive, meaning that data is builds toward general patterns or theories, you don't go into it with a theory ahead of time and fit the data toward that theory you you go. The other way you take the data and goes is this informing some kind of pattern. It typically has some communication between the researcher and participants, sometimes it's even co created, and it's often very holistic. So the idea is that you're trying to yield to the fullest possible picture. So an example of this would be a researcher with a spinal cord injury, using autoethnographic analysis of personal journal entries that were written over a 20 year period, particularly while that individual was pregnant, to understand the broader culture of disability, pregnancy and childbirth. So they're interested in how disability in pregnancy and childbirth all with the culture of that is how that fits within broader society. And they use their own experiences in order to analyze that. Another qualitative method, methodology is phenomenology, which is the study of a phenomenon or essentially the concept that is through lived experience. It has strong philosophical roots. It also is critical of the scientific method. Typically within phenomenology, those who fall into this area would believe that human consciousness and lived experience provide an understanding of the nature of social reality. So we are looking at how people experience phenomena how people go through and have lived through a certain experience. And typically, this is going to involve multiple in depth interviews, as well as potentially bringing in data from other sources. Typically, researchers will do what's called bracketing ahead of time in order to bracket or set aside their prior thoughts. In order before the data collection process or the data generation process, that way, they're not inadvertently influencing that data generation or at least they they have some context into what they were thinking, when they went into that data generation, process or phase or whatever they're entering, in some specific types are interpretive phenomenological analysis, which looks at perception. And there's also empirical phenomenology, which is much more descriptive, looking at essential structures, and that one is much more societal where interpretive is much more individualistic. So an example of this would be interviewing parents about their experiences when trying to attempt to be physically active in their own community while having a child or children on the autism spectrum. Another methodology that we're going to cover here is, is a case study. So it identifies what to be studied Not, not how. So it focuses on the complexity and distinctiveness of a case, within a certain context. It's typically very detail oriented and in depth description. And there's often extensive data collection involving multiple sources. But that may be over one or two cases, you're not going to have very high numbers in a study that uses a case study design. So an example might be doing observations, which one does 16 in this particular example of a six and a half year old boy on the autism spectrum, to understand changes in behaviors and

benefits of non directive play therapy. So they're studying one case, which is the six year old boy. And they're doing multiple different observations of that boy, when they're in non directive play therapy. And the idea is that they would then describe in great detail changes or things they observed during that time. There's also what's called qualitative description, which is where you're developing essentially a comprehensive description in summary of an of a phenomena or event, you're not interpreting any data, necessarily, within this, within this design. You're often just simply presenting what the findings are, you might literally just, you're not trying to construct any type of experiences, you're just trying to say, this is what happened. In this particular setting, much like you would a quantitative descriptive study where you're not analyzing or interpreting the results you're just describing. What is this, what you measured? Typically, qualitative descriptive studies are often confused with more rigorous methods. Sometimes you'll see them described as phenomenologies. But they're not necessarily studying a phenomenon, right? They're just describing what is occurring within that phenomena. They're not actually interpreting it. And the idea is ultimately to provide description in quote, unquote lay language, so language that people outside of your specific area can understand. And an example of this, and sorry to keep using autism examples. It's the literature I know. heliyon colleagues interviewed boys on the autism spectrum to understand their experiences in physical education in primary school. And again, they didn't try to interpret that experience, but they just described what those boys went through in their physical education. So, the last one is grounded theory. And this is one of the more systematic types of qualitative work. And the idea behind grounded theory is to generate generate and analyze data to construct a theory. So it works the opposite way of quantitative theory, design where you think up a theory and then you go and test it. This one you build a you collect all the data, you generate the data and then you create, or you you've developed a theory that is based and rooted in that data. And within these types of studies, you you want to explain an event or you're looking for a process by which somebody is doing something or going through some experience or some kind of action. And it is rooted in sociology. So again, looking at structures of how things exist, and how society influences different behaviors and the individual or or, you know, community level or even state level or beyond. It has rigorous systematic data collection that's rooted within the data. And it's difficult when you do so because you don't know necessarily when you've reached data saturation. So, within qualitative work, you know, you're done. No inquiry in quotations, you know, you're done collecting data when you're not seeing anything new. When you're analyzing an interview, or you're going through an observation, and nothing, no new topics are coming up. Well, within grounded theory, it's hard to know that because you're not collecting new interviews, you're really rooted in that data. And it's hard to really understand when the stop point is, there are four different phases, although it varies depending on which type of grounded theory you end up using. But the phases are usually open coding, axial coding, selective coding, and theoretical coding. The specific types are glazen, which is a

pure inductive type, a straussian, which has a very strict structure. And then there's constructivist, which is a theory that is based on experience, which is rooted in the idea of constructivism as a paradigm. Typically, you'll see grounded theory work that will pick one of one of the other glazing or straussian types of grounded theory, within straussian. People don't often go all the way to presenting a theory. They use it as a structured method to analyze data, which isn't necessarily its intention. And so as an example, here's one of my own. But we interviewed 23 adults, and had over 1200 codes about the process in which autistic adults experienced physical activity across their lifespan. And we developed a model based on those 23 interviews and over 1200 codes. And you can see what the model looks like. And this has been published, it just came out earlier this year. And so for your first part of your discussion, what I'd like you to do is find one of the sources that you cited in your problem statement that uses qualitative methods. If you didn't use any qualitative studies, you'll have to go and find one. But what I want you to do is skip to the Methods section. And for discussion, part one, this one has two parts, I want you to look and see what type of design that they used. And then once you find that, I want you to look at what their purpose was, which is usually said in the last sentence or so of our sorry, the last paragraph or so of the introduction. So see if their design match their purpose or their research question. And so you may have to refer back to our research question. lecture where I tell you how different questions are set up based on different methods. Or if it's process, it's going to be grounded theory, if it's phenomena or experience, it might be phenomenology. So you may have to go back and check and see which language is used for which types and see if those matchup do their design match their does their design match their purpose? sampling. So, like within quantitative research, we have multiple different ways that we can sample for qualitative work. Typically, you're not going to have random sampling, or convenience sampling, or any of the other samplings that we talked about. In the quantitative sampling module. Within qualitative work, you have what's called purposeful sampling, or purposive sampling. And the reason for this is because you want to have your sample comprised of participants who actually match what you're looking for. You don't want to just randomly try to find people and then realize they have nothing to say over a particular topic. So there's 14 different ways we're going to talk about how to purposefully sample for your qualitative research. So number one, is we can have extreme or deviant cases. So this might mean what this means we're going to select individuals who are at who are unusual or special in some way. So they're different right there. If we consider the average person's experience there, they're out on the edge. So we're going to select them because Because they are so extreme, or they're so different from what we would typically see, there's intensity, or typical case sampling, which is similar to extreme case, strategy, except there's less emphasis on the extreme. So you're going to explore typical cases. So you're going to look at the general the middle, we're in the case of, of extreme deviant ones, you're looking at an example they're highly successful programs in comparing at ones that fail. We have

maximum variation sampling, which is also considered heterogeneity, which is you're going to maximize the variation on the phenomena of interest within your sample. So this would be typically used to understand how phenomena is seen or understood by different people in different settings at different times. So you're really trying to capture how different things could be in all those different places. For example, if you're studying different sports teams, you could look at different seasons. And you know, you're recruiting during different seasons. So fall or spring or winter, summer, you're looking at different sports, you're looking at male and female sports, maybe you want to also include intramural versus, you know, varsity NCAA sports, so you're looking at the difference between those. So you're trying to capture as much variation within your sample as you can. The flip side of that is homogenous sampling. So you're trying to describe the experience of a subgroup who share a similar characteristic. And so it's typically around some demographic variables. So again, maybe you you want to know about a particular sport, on campus, and so you're going to sample from from individuals who play that sport. There's stratified purposeful sampling. So this is a combination of sampling strategies. So typically subgroups are chosen on specific criteria, and then sample cases are selected within those stratifications. So for example, you may 1 want to have maximum variance. So you pull people from multiple different geographic locations, and then you want within that maximum variant, so you're going to have polar opposites within each of those geographic locations, because you know, the geography influences how those cases might be, or how that phenomenon might be experienced. There's critical case sampling, which is where you're, you're looking at an important critical case. So again, this, this is typically done when funds are limited, or, or could be particularly helpful and exploratory research that doesn't have a lot of understanding of a particular topic area. But you might only select a very small few. You'll see this often in medical work, where individuals are studying a very extreme case, a rare case of a disease, that doesn't occur in many different people. And so you can't have a big sample. So you need to study that one person, because that's going to give you more evidence to then maybe do larger studies, if you can find people. There's no ball, or what's called chain sampling, which is where you start with one key person, and then that person introduces you to the next one. So it becomes a chain. So almost like a phone tree, right? So you're going to start with one person that you know, you're going to purposely sample them, you're going to ask them, Do you know of anybody who might be interested, and then they may give you two or three people. And so you just sort of build from there. There's criterion sampling, which is where you set up a certain criteria to identify cases. So an example might be that you're looking for participants that pass the TOEFL exam, which is the exam that international students have to take in order to qualify for graduate school in the United States. And so you want to do research with that population. So you're going to look for people who passed that, in the last semester. There's theoretical sampling, which again, is in grounded theory, which is considered constant comparative. And so you're collecting data to

examine categories in the relationship in order to fully derive a theory. Essentially, you are using the data you have to re examine and build up and sample theoretically within your own within your own data collection, not pulling In new data, or sampling new people, but you're sampling within a certain case that you've already derived data from. There's confirming and disconfirming disconfirming cases, which again, is, if you're looking at a particular phenomena, you're you're looking at how participants would either confirm or disconfirm. That phenomena, there's opportunistic, which is essentially where you're sampling from who you can get to. There's purposeful random sampling. So you might be able to sample from a large enough group that you go into a specific, So say, for example, you want to recruit from the recent Teachers of the Year. So you're purposefully sampling them, but then you're going to randomly sample from from that specific group. And then there's sampling politically important cases, which is, in the case of poll data, you're you're specifically seeking out particular groups in order to sample from. And so how do you determine sample size? How do you know when you've recruited enough participants? Well, there's a few different factors that are going to play a role in those decisions. First is the scope of this study. Topics with a broad focus will typically take longer and need to include more participants. If you have very narrow focus, you might not need to take as long or you might not need as many participants, the nature of the topic is going to influence that. So whether it's obvious and clear, abstract and complex. Again, if it's obvious and clear, you may need smaller numbers of participants. If it's abstract and complex, you may need more. The quality of data that you get will determine how many people you recruit. Some participants just simply will not give you a great amount of depth of information that you need. And so you may have to recruit more people, the numbers of interviews per participant influences how many people you have. So if you do more interviews, you may require less participants. If you do one interview per person, you may have to have more. And the study design is going to play a role. So is there a need for multiple points of view at different levels. Some of you might get away with only needing one person because you're doing a case study, some of you might need at least four or five. Some of you might need 10 or 15, you might need larger numbers. And so, for your first discussion, for the part two of it, what I'd like you to do is take back out that article that you started with, again, skip the map method section, and I want you to look at their sampling procedure. So what did they do to sample for their participants? Do they even mention it? Can you take a educated guess if they don't mention their specific sampling procedure? What rationale what reason did they give? And what are the strengths and weaknesses of their sampling procedure to their reason? And potentially, is there another sampling procedure that could have worked for that study. So now let's talk about data generation. So we've talked sort of broadly about qualitative methodology about different ways in which to conduct qualitative work. From this point, we're going to be talking about the methods, what you would actually do to generate the data for qualitative work. So again, it can vary by by study, and it should fit to the design and purpose of that study.

interviews are the most common and can be used with just about any of the different types of designs that we talked about previously. But that doesn't mean they're the most appropriate. There are new methods being created each year to conduct qualitative work. Some examples are photo voice and collaborative drawing. So in the example of photo voice, that is where you might do work with adults with learning disabilities or intellectual disabilities, and in order to help build the interview, so you get some depth, you may give them a camera, a disposable camera that they take with them for a week and you ask them to take pictures of certain things regarding your research topic. During the interview, you can use those photos and allow the person to provide the context. So what Did they take a photo of why did they take the photo, and it can be a touchstone for doing the interview with individuals who might have difficulty just coming up with information on their own. It's a good supportive process. It's been used with young children in order to conduct work. It's also been used with elderly individuals. There's also collaborative drawing. This one has been used with younger kids who in again, they will draw a picture about a topic that you have interest in learning from them. And through that drawing process you are learning how they describe it, how they think about it, what their the topics they're talking about. In addition to interviews, we also have observations, we have written documents, and we have visual data. And we talked about a couple of those already. So in the case of the interviews, they can be one on one, or they could be group interviews, which are also known as focus groups or even talking circles. So depending on the type of information you want to generate, and how you want those interviews to go, you may gravitate towards one or the other. In the case of interviews, individual interviews, you might do that for more sensitive topics. Or if you have individuals from broad geographic areas, or who would have trouble otherwise, getting to one specific time in organizing a group. If you do a group interview or a focus group, or talking circle, the idea behind those is that you will generate information that you wouldn't alone in an interview, just one on one. So for example, say you want to learn from from teachers, their their frustrations, in in their work life, while doing an interview with the teacher, you might, you might get pretty detailed information. But if you were to put them in a focus group, you could have one of two things, you could have people who don't feel confident enough to share information. So they just don't say anything. Or you get agreement, where once one person brings up a topic that could be taboo or a little sensitive to talk about. Other people realize that it's okay to talk about that and therefore start chiming in. And they may come up with information that you might not even thought to ask or might not have come out based on an individual one on one interview. within any interviews, though, you have to build rapport, you have to break down the power dynamic that occurs between you the interviewer, and the person being interviewed. Because even though you may be younger than them, in some instances, even though they may be the experts in a particular topic, you are the researcher. So you already have a sense of power going into there and you have to be able to to create a relationship with

that person. Because if you can't, then you're not going to get a good amount of information. Some of that may be the location in which you decide to do your interview, if you have them come to the campus, that again is reinforcing the power dynamic. If you go to their home, depending on comfort, obviously with a pandemic it makes that difficult. But when you go into somebody's home there they have more power, if you meet in a neutral location, that can shift the dynamic to say, you know, nobody is on you know any higher than the other were uneven playing field. Also, you have to be careful of how you ask questions. Typically novice interviewers will ask more than one question at a time. And therefore, you may have noticed this with political interviews, but reporter will ask a multi part question. And the politician picks one of those questions and answers that but doesn't answer anything else. As a researcher, you want to know all of those things. So you want to make sure the person is answering the questions that you're asking. So you want to break them down and give them one question at a time. You also may have to norm questions, which means in some instances when when a question again might be seen as a bit sensitive or taboo, you might have to normal. So for example, you may say some people aren't happy with their administrative processes to go on and their work experience. Other people find them to be okay, although they have some reservations. How do you experience your day to day work life? Something like that. Questions can be structured, meaning you have a set structure all the way through. They're uncertain structured meaning you start with some big broad topics, but otherwise you don't have you let the interview go in a natural direction. Or you have what's more commonly used is semi structured, in which case you have a set of questions that you've pre determined, but you allow for discussion to occur within each of those points. Questions can be closed ended, although typically with interviews, you want open ended questions, that way, you're getting more than just yes or no answers. And you can allow for some depth and the responses. We have observations, which is where you need to be in the field. And so typically, observations can start broadly, during initial visits, you might not have a set thing that you're looking for. But it becomes more specific as, as you've determined what that interest is, or becomes apparent within the setting. Typically, you can have different types of forms of observation. So there's a complete participant, which is where the researcher actually takes part in whatever is going on that is being observed. There's the participant as observer. And so which case the participant is acting as, as the observer and the participant. And we have the observer as participant, which is where participation is secondary. So in that participant as observer, the the researcher doing the work will, will be participating, but then we'll step back and observe and take some notes, and then go back in. And the observer is participant, the observers there. And they may interact, but only if people come up to them and interact with them. So in the case of, for example, doing work with kindergarteners, I would go in and be an observer as participant, where I would stay on the side and observe what's going on. And if a child asked me to go and join, I would then join into the game, or I would interact only if people came up to me. And

the last case, we have complete observer where there's no interaction. And it all depends on what you want to get out of your observations. If if you just simply want to see what's going on, being an observer, maybe your best case, if seeing how people interact in certain settings, doing one of the others and we like complete participant or participant as observer, where you are actually engaged in that activity. That's going to change what you're observing, you're going to get a different viewpoint. And the data that's generated from all of this is field notes. So you are going to write down what you are seeing an example is the picture you see on the right hand side where you have descriptive notes and reflective notes. And the descriptive notes is literally just writing down what you see what you observe. In many cases, this might be multiple pages, I've had, in many observations, several, I'd seven to 10 pages of handwritten notes at the end, because I'm literally writing down everything I'm seeing, I'm not selectively writing down because I don't necessarily know what's important or not. And if I capture everything that is there, then I can go back and look at those notes and say and pull out what is important. But if I only write what's important in the moment, I might miss things afterward. reflective notes are things where you are starting to add interpretations. And so we'll talk about this during the data analysis. But there's parts and qualitative data, where you you collect what is there, and then you start to reflect and interpret about that data. We have written documents, which could be public sources of information like newsletters, storable, archives, social media, we can have documents that are collected from participants, like logbooks or diaries. And these are usually used in addition to but they can be the primary source of data collection, depending on the question that you're asking, and the methods that you use or the methodology and methods that you're using. And then we can also have visual data. So these are things like photographs, drawings, maps, diagrams, videos, and they can be used during the data collection process to support deeper data collection. So maybe you do in person observations, but you also video those instances and so you can go back and observe the video and so you might find things that you didn't collect the first time You could also have, do those observations, but then look at diagrams and analyze that and see how how your findings in one set of data compared to the findings of another set of data. Because that might give you a deeper understanding of whatever situation you're looking at. So, for discussion number two, again, this is a two parter, I want you to again, get that article back out. So you're still using the same article. Again, I want you to skip to the methods and I want you to look at what they use to generate data. What types of methods did they include? And then what are the strengths and weaknesses? How did that relate to their purpose? And to their sample? And what was, was it a good thing to collect that data? Or did they could they have also included something else? Now we're going to finish today we're talking about analysis and interpretation. So unlike quantitative data, with qualitative data, you may have to do a little bit extra, once you've done generating it, to get it in a place in which you can analyze and interpret it. And so in the case of interviews, you may need to transcribe them, you

might need to organize your data to make sure that you're you're keeping things where they should be that you don't miss place data, because in the case of many qualitative studies, you're going to end up having quite a bit of data to work with, and it's quite easy to get lost as you start to go through it. So having some organizational structure is really important. You also want to make sure you know what the goals of the analysis are. So is it is it to create a taxonomy? Is it great themes or a theory? Because that's going to change? how you might go about analyzing and interpreting your data? Is your data analysis emergent, or inductive? Or is it deductive, which you're basing it off of some theory or prior framework that the literature tells you is important. And so within qualitative work, the data is immediate. It's ongoing, and it's a spiral. So within qualitative work, you can, you're going to start by collecting your data, you're going to organize that data, you're going to read that data, then you're going to code that data, and you're going to generate themes and transcribe and interpret those themes. And then you're going to represent the findings and tie it all back to the prior literature. But as soon as you get that data, you have to be organizing that data. And you're going to be reading that data. Because the process is iterative, and it's reflective. And so as you conduct your first interview, you're gonna want to go through that interview and say, is there anything that I didn't ask, Is there a follow up question, I should have asked, Is there something that's coming up in this interview that I need to ask that person more about? Or I need to ask, make sure I ask the next person this question. So it allows that flexibility, and it's built into that process. Typically, the general steps as that that diagram presented, is you're organizing and preparing that data. So that again, is transcribing it. It's it's removing any identifiers. So again, we're making it come anonymous, but confidential, so you're going to add pseudonyms. And then you're also going to winnow the data. So there may be some things you can get rid of, you're going to want to read and look at all the data you have. But but don't get lost, right, you're going to keep the purpose of that data in mind as you go through it, you're going to start coding. And so again, that's looking for concepts or relationships or perspectives or different characteristics or even settings. And that's going to help you generate your descriptions and your themes of that data. And then you're going to decide how you want the findings to be represented, and interpret those findings. So for your last part two of your discussion number two, I want you to pull that article back out. And I want you to look at the results and the findings. So how did they analyze the data? How did they interpret those findings? And how did they report them? As you as each of us individually present our studies and you start to read through what other people are posting, you'll notice there's a wide variety of how analysis can occur and how interpretation can occur and there's also some similarities. So if somebody is using an ethnography, they may use a similar analytic technique as Somebody who is doing a phenomenology. So in conclusion, for today, we know that qualitative methods focus on the experiences in order to inform findings. It's putting whatever you're studying in a context, where quantitative data is looking for generalizations. Qualitative data is looking

for context and specific specificity. The researcher plays an essential role, you are an instrument within the data generation process. And oftentimes, at least within thesis work, you may have to have a researchers instrument statement, where you actually say what your research lens is and who you are, because that changes how you interpret the data. I as a cisgendered, mid 30s, white male who grew up in rural Michigan, who also identifies as disabled has a different interpretation, then somebody who is not cisgendered, mid 30s, white male grew up in rural Michigan with a disability. So that's going to change my lens and how I interpret things versus somebody else. I shouldn't have to say this, but I'm going to qualitative methods are just as valid as quantitative methods. It is just as rigorous. And it is not any bit easier than quantitative methods are. And in fact, many folks have said that the hard sciences aren't necessarily hard to do. Within qualitative work, you, you really have to put emphasis on your role and really have a command of who you are and why you're doing this work. And you're also going to take a lot more time, it requires a larger investment during the data collection, and analysis phases. But the nice part about qualitative work is because you're so involved in the data generation process, the interpretation is usually much quicker, because you already are starting to think about it in already occurs, as the data generation process is, is continuing along, you're reflecting on on what you're thinking is occurring. So when you get to that interpretation phase, it's much quicker than in quantitative work where the data generation data collection usually is shorter, it's sometimes through surveys can be very quick. And the analysis can be very quick. You put it through a statistical program after you've cleaned up the data. But when you get to the interpretations, that's where it's a little bit longer in quantitative work. So with that, I'll see you next time.