Welcome to this episode of Sociology-- Studies of Society. Today's lesson is research methods. As always, don't be afraid to pause, stop, rewind, or even fast forward to make sure you get the most out of this tutorial.

So today, we're looking at research methods, and specifically, we're looking at the scientific method. So what is the scientific method? Well, the scientific method is really a process, and it has eight different steps to this process, and you see them appearing on your screen now.

I'm going to go through each of these steps individually and explain how they all work together, but the key component I want you to think about first is that it is a process. So researchers in sociology, and other fields that use the scientific method, they go through this process, and it's a continuous loop. You don't finish when you get to eight. Actually, when you get to eight, you start back over at one.

So let's look at the specific eight parts to the scientific method though. First part, define the problem. First thing scientists have to do, and specifically in this case sociologists have to do, is they have to define what exactly they're going to look at. Now, once you've narrowed in on what you're going to study, you go out and you look at what other people have done on it.

Part of the scientific method is replicating other people's studies, so trying to do exactly what they did with a slight maybe variation, just a different population or a different time period. And other times, you're going to maybe see an experiment someone else did and see that there's maybe a flaw or an issue that you have with it, and you want to change it. So the second step is to review other people's research, and see what's been done in the field before and what research already exists.

Now, the third step is to hypothesize about what you think is going to happen. So you define what you're going to look at, you look at what other people have found, and then you say, aha, I think in this situation this is going to happen. That is step three. So you make an educated guess on what you think is going to happen.

Then, you set up step four. You design an experiment to see if your hypothesis is right. You want to prove it right or wrong, and there are a couple of different ways you can design research in sociology. We're to come back to step four later and look at more details about that research design.
Step five is you actually carry out the experiment you designed, and that's collecting data. So step five is you collect the data. You find out what happened. Now, actually, let me clarify that. When I said you find out what happened, you find the data.

Step six, you actually find what happens. You get the data back, and you tabulate the results. And you use some different statistical methods to actually see if the differences you found are relevant. Can they actually be accounted for, or is it within the margin of error? Is there a chance that it just happened by chance, and you can't really say for sure that these two things are connected?

After you've found the data, you've collected it, then you've interpreted it, then you explain what you found. You say, I think that, with this research method here, we designed this experiment, we have these findings, we did some statistical analysis on those findings. This is what I think these findings mean for society, and what did we actually find?

So the last step is you leave something else to continue to study. Again, that scientific method is a process, and so you know that when you finish step seven you explained what you found that what you found is just the start. Maybe you want to point out things that you would do differently next time, or maybe you started to understand this is a bare tip of the iceberg of a concept, and you want to suggest ways that the concept can be explained more. And that helps yourself and other scientists, or sociologists, moving forward to really tap into the research that you've done.

So as I said, we're going to go back to step four which is design research, and for sociology, there's really four different types of research methods. And a research method is just a systematic plan for conducting research. So it's a basic design on how you're going to do things, and there's four basic designs for sociology. There's experiments, there's survey research, there's secondary sources, and there's participant observation. And I'm going to go through each of those individually to explain the four basic research methods in sociology.

So the first one is experiment. Now, this one you're probably the most aware of. It's what you think of when you think of a scientist. You are investigating a cause-and-effect relationship in a controlled setting. And in this controlled setting, you're really trying to set up an analysis of the independent and dependent variables, and they have control groups.

There's actually another tutorial that goes into more depth about understanding actually each of these parts of research design in sociology. But when you think of just a generic scientist, you normally think of experiments, and that's what this really is. And these experiments are really
quantitative, so you're looking at finding numbers and data.

Now, another method is survey research. Now, survey research is a very different way to get answers. And what you do is you go out and you ask subjects to respond to statements and questions, and you see what their answers are. And you can do this through interviews or questionnaires, and it's a very different way to get data from experimental research.

Now, an aspect of survey research is you could have a focus group. And that's where we have a survey with a really, really small number of people, and you're targeting a specific population. Focus groups are used much more readily, because you're really trying to hone in on a small group. And interviews can take a long time, whereas having a survey with some questions on it, that doesn't take as long. So it can be distributed to a lot of different people.

Now, the results from this can either be qualitative or quantitative, either way. So it can really be based on just getting raw numbers based on people's rankings of different statements. Or can really be this open-ended, word-based answers that are a lot harder to statistically analyze.

Now, the third design method in sociology is secondary sources. Now, secondary sources is really just looking at data collected by other people-- that's why they're called secondary-- and trying to analyze them. A really typical way for sociologists to use secondary sources is to look at data like the US census. Now, the advantage of this is that someone else, the US census-- the US government for the US census-- already gathered all this information.

So it's very affordable, and it's free to access in most cases, and they have very extensive research. If I'm a researcher, it's pretty hard to be as extensive as the US census. So that's really an advantage of this, and I look at their numbers for different patterns, and this is another quantitative approach to sociology research.

The last design research type is participant observation. Now, this is very different from most forms of what we think of as science. It's really unique to sociology, maybe anthropology, this kind of getting research. You don't really find a lot of psychologists or biologists doing stuff like this. It's a very unique way to looking at research.

And what a participant observation is is it's a research method where people are just observed in their daily routine. So you go in, and you might just watch people and see what happens. And sometimes, the best way that this participant observation works is actually, first, you have to get to know them and become a member of their community and seen as a known commodity. Then, you
can actually get real participant observation, where you seeing them in their daily routine. So it's a very different way of looking at research, and this research gives you really, really descriptive and qualitative results that are super in-depth, looking at whatever you happen to be researching.

So today's takeaway message-- the scientific method has eight different steps. First, you define the problem. Then, you review the work of others. Then, you form a hypothesis.

Then, you choose your research, what the research design you're going to have. Then, you collect the data. Then, you interpret your data, and then you explain what you found. Then, you pose new questions for people.

Research method is just a systematic plan for conducting research, and there's four different main types in sociology. First one is experiment, and that's where you're affecting cause-and-effect relationships in a really controlled setting. Then, we have survey research, where subjects respond to statements and questions from an interview or a questionnaire, so it's like a survey. And a subset of that could be a focus group, where you have a really, really tall, really, really small segment of the population that you're targeting to get these responses from.

Secondary sources is looking at data collected by others to do sociological research, and participant observation is looking at people in their daily routine and just observing them in their everyday life. So that's it for this lesson. Good work, and hopefully, you'll be seeing me on your screen again soon. Peace.