

Chapter 2 – How Sociologists Do Research

1. LEARNING OUTCOMES (WITH BLOOM'S TAXONOMY)

After completing this chapter, students should be able to:

- **Identify** different levels of experience and their significance to sociological research.
- **Recognize** common forms of unscientific thinking.
- **Understand** the relationships between viewpoint and sociological understanding.
- **Recall** the major steps involved in the conduct of qualitative and quantitative research.
- **Explain** the ethical norms that govern sociological research.
- **Compare** the methods of qualitative and quantitative research.

2. WHY IS THIS CHAPTER IMPORTANT TO SOCIOLOGY STUDENTS?

Students are enmeshed in a social reality that is both increasingly interconnected and extraordinarily complex in terms of the amount of information that people are presented with on an ongoing basis, and which must be parsed carefully to distinguish truth from “truthiness.” Hence, student attempts to more completely and accurately understand the social world can best be supported by learning the methodologies by which objective knowledge of the social world is created by sociologists. By the same token, the legitimacy of sociology as an academic discipline requires that findings and conclusions be substantiated with and by research that has been scientifically collected and analyzed in order to be awarded “truth value.”

3. WHY SHOULD STUDENTS CARE?

At first glance, the topic of sociological research might seem dry or inaccessible to students, but there are two reasons why it can be exciting as well as quite important for them.

First, many students are products of a culture where the emphasis is placed on “individual experience” as the *de facto* source of one’s knowledge and understanding. As sociologists know, a strictly individual frame of reference is both an incomplete and misleading picture of the social world. The topic of research is an important opportunity to show how a sociological perspective can directly enrich their understanding of their lived experience beyond the scope of individualism, in a manner that is congruent with Mills notion of the sociological imagination, as introduced in Chapter 1 (pp. 10–12).

Second, in our increasingly “information-dense” society, students are constantly challenged to accept a broad variety of truth claims in the media that originate in research of one kind or

another. A systematic introduction to sociological research is an ideal forum in which to assist students in expanding their literacy about objectivity in the context of scientific versus unscientific knowledge claims.

4. WHAT ARE COMMON STUDENT MISCONCEPTIONS & STUMBLING BLOCKS?

Students may believe that the scientific method is a dry, highly complicated process that is the exclusive preserve of highly qualified researchers. They need to be encouraged, through concrete examples and hands-on activities (see suggested activities outlined in the “Throughout the class” section), that basic sociological research using the scientific method is well within their grasp.

Students may also harbour the belief that the scientific method is a step-by-step, linear process and that researchers follow the research cycle sequentially. This view may result in the belief that there is little (or no) room for creative thinking and implies that findings are “conclusions” (end of story; no need for any further thinking or research). See the online interactive graphic referred to below in “Class Exercise” (pp. 42–43 of the text also discusses this issue).

Although most students will grasp the distinction between knowledge based on “objective/scientific” thinking versus “subjective/non-scientific” thinking, some sensitivity is required, for instance, in the case of students with strongly held religious views. The TEDTalk (Michael Shermer on strange beliefs) discussed below, addresses non-scientific thinking in a humorous and non-threatening way (pp. 39-41 of the textbook discusses unscientific versus scientific thinking). All students will need reminding that the borderline between scientific and non-scientific knowledge can shift, as knowledge acquisition (and the truth value awarded) is an ongoing process. The activity “Science as process” highlights how knowledge categorized as “non-scientific” thinking *can become* valid knowledge based on science.

Many students struggle with understanding the applicability and relevance of research to everyday living. To grasp and understand the abstract concepts of theory, dependent and independent variables, spurious association, operationalization, and so on, students may require concrete demonstrations and applications in the classroom (pp. 46–55 of the text). Likewise, they may feel intimidated by the prospect of analyzing data that is found in tables and graphs, while taking at face value statistics that are reported in the media. Students may need time devoted to learning and practicing the skill of critical interrogation (see p. 51, “Reading Tables”).

5. WHAT CAN I DO IN CLASS?

At the start of class:

Reality and perception: Show students the one-minute video “Awareness Test” (<https://www.youtube.com/watch?v=Ahg6qcgoay4>), which shows viewers to count the number of passes completed by one of two basketball teams. Few students will notice the ‘moonwalking bear’ who passes from one side of the frame to the other until they see the video the second time. Ask students what the video tells them about sociological research. The point here, which reinforces the opening anecdote of Chapter 2, is that reality isn’t just “out there,” but is instead a result of choices people make about what to perceive, and how to make sense of patterns. Examples from Gestalt psychology about visual perception will also engage students (<http://www.users.totalise.co.uk/~kbroom/Lectures/gestalt.htm>).

Science as process: “Chicken soup helps get rid of a cold” (p. 37 of text). Ask the students if they believe this (by a show of hands/clicker question). Some students may volunteer that it is “knowledge based on tradition.” Discuss Dr. Stephen Rennard’s findings that chicken soup could in fact reduce inflammation *in vitro* (<http://www.pbs.org/saf/1210/features/know2.htm>). Rennard’s chicken soup study, formally titled “Chicken Soup Inhibits Neutrophil Chemotaxis *In Vitro*,” was published in the scientific journal *Chest*, in 2000, volume 118, pp. 1150–1157. Highlight the fact that science is also instrumental for validating what may be currently regarded as “invalid knowledge.”

Mini quiz: (on the assigned chapter/reading for this class session) Begin with five multiple-choice questions for the students to answer. These questions can be selected and utilized as a “framework” for what you will be covering in the session.

Begin with an urban myth: Ask students by a show of hands how many have heard of “the face on Mars,” then show them the iconic image, which became for many people “proof” of alien intelligence. Briefly discuss the scale of the efforts made by NASA to investigate and ultimately debunk the myth (http://science.nasa.gov/science-news/science-at-nasa/2001/ast24may_1/). This is a powerful bridge to a discussion about non-scientific versus scientific knowledge. (The link contains background on the issue as well as several versions of the image.)

Throughout the class:

Class exercise (instructor led): Ask for volunteers to suggest research questions; have the class vote on one, and then collectively work through and discuss in terms of the research cycle. University of Berkeley has an online “interactive” graphic (entitled “The *Real* Process of Science”) that demonstrates the non-linearity of the research process—how “science circles back on itself so that useful ideas are built upon and used to learn even more about the natural world.” Available at http://undsci.berkeley.edu/article/howscienceworks_02. [Understand/Apply]

Think/Pair/Share or Small group discussion: “Is Nearsightedness in Children Linked to Night Light Exposure During Sleep Before Age Two?” The original research study says yes (published in the May 13, 1999 issue of *Nature*). Two subsequent studies (published in the March 9, 2000 issue of *Nature*) show no association. Science NetLinks has created a student worksheet that concisely summarizes the studies and includes questions for students to answer (discuss). This is an excellent exercise that demonstrates spurious association, the value of peer review, and the ongoing investigative nature of science. (Printable worksheet available at: <http://sciencenetlinks.com/student-teacher-sheets/nearsightedness-children/>.) [Understand/Apply]

Think/Pair/Share: Ask students to think of an instance when they participated in a survey where the results would suffer from “reactivity” (pp. 56–58) and share/discuss with a class member. [Understand/Apply/Analyze]

Small group/Class discussion: Split the class into small groups and give each group a list of research questions (i.e., “Are rich people healthier?”) Either designate each group to a question, or let them choose. Provide each group with a tip sheet on research design, and ask them to discuss how they would go about investigating their question. (Some guidelines for a tip sheet can be found at <https://www.boundless.com/sociology/textbooks/boundless-sociology-textbook/sociological-research-2/the-research-process-26/determining-the-research-design-168-7446/>) You might want to give each group flip chart paper and markers with which to map out their research design. Then have each group present its research design to the class, ensuring that there is sufficient time for discussion as the class moves through each research question. [Understand/Apply/Analyze/Evaluate]

Think/Pair/Share or Small group/Class discussion: Ask students to think of and list/volunteer examples for the 10 types of “unscientific thinking” beyond the ones given in the textbook on pp. 37–38 (knowledge based on tradition, authority, casual observation). This gives students the opportunity to interrogate and critique the prevalence of unscientific thinking in their own life experiences, provides them with a list that has a more personal referent, and encourages them to think beyond and outside of the textbook. [Understand/Apply/Analyze/Evaluate]

Documentary: The Stanford Prison Experiment (20 min.) Available at https://www.youtube.com/watch?v=L_LKzEqIPto. There is also a written summary and analysis of the experiment at <http://www.prisonexp.org/legnews.htm>. Ask students to make note of/consider the research question, the research design, the ethical implications, and the generalizability of the findings. Broader application to contemporary situations can be found in Philip Zimbardo’s TED talk on Abu Ghraib in the context of the Stanford Prison Experiment and Stanley Milgram’s work (2008: 23 min.) at http://www.ted.com/talks/philip_zimbardo_on_the_psychology_of_evil?language=en [Understand/Apply]

TEDTalk: Michael Shermer on strange beliefs (2006; 14 min.) Available at http://www.ted.com/talks/lang/eng/michael_shermer_on_believing_strange_things.html. “Michael Shermer shows how we convince ourselves to believe—and overlook the facts.” Students respond well to this humorous talk (subtitle enabled) that addresses a number of concepts and ideas from this chapter in a very “non-threatening” way. [Remember/Understand]

6. HOW WILL I KNOW THAT MY STUDENTS HAVE LEARNED THE LOs?

End the class with a mini quiz: Focus on multiple-choice questions that address the Learning Objectives of the chapter. Review and discuss the “correct” answers for each question. (The use of “clicker” technology and turning point slides is very effective for this exercise.)

Ask the students to write and submit: A short paragraph describing “the most important thing I learned today” **AND** explain “why” they consider it to be important (e.g., connection to real life experience).

Writing Assignment: Students are to do the following:

1. Choose an everyday sociological phenomenon that they have observed.
2. Formulate a sociological research question based on that phenomenon.
3. Describe two alternative methods for conducting their research.
4. Select one of the two methods outlined, and present a brief justification as to why that method would/should be used.

(Note: Students may need assistance formulating and/or examples of “sociological research questions.”)

Research and writing assignment: Does playing violent video games translate to violence in real life? (e.g., high-school shooters/bullying, etc.) Given that popular video games are increasingly more “violent,” ubiquitous, and interactive, ask students to explore and examine research articles on this issue and report their findings.

Group project: Students are to collaborate on this assignment—selecting a sociological research question and designing a research study that they will present to the other class members.

MindTap: Refer your students to <http://www.nelson.com/student> to access the **MindTap** for *Sociology: Your Compass for a New World*. MindTap is a personalized program of digital products and services that engages students with interactivity while offering students and instructors choice in content, platforms, devices, and learning tools. This resource includes quiz questions, videos, and articles that are accompanied by thought-provoking questions that challenge students to think critically about current issues and events. Ask students to utilize this

learning tool, and bring to the next class any questions (difficulties) they may have in regards to information from this chapter.

7. HOW CAN I ASSESS MY OWN “PERFORMANCE”?

A critical reflection on my own practice: insights and understandings:

- A. Did I get the attention of my students at the beginning of class?
 - a. What did I do? Did it work? How? If not, why not?
 - b. Did I get the right kind of attention, or the wrong kind?

- B. Did I allot enough time for student dialogue/participation/engagement in the learning process?
 - a. If not, why not?
 - b. Is there any material that can (or should) be minimized or removed in order to allow for student input and participation?
 - c. Are there ways of transferring some of the content online to open up more time in class for participation and engagement?

- C. How could I incorporate more student input and participation? (e.g., clicker questions, think/pair/share, one-minute summaries)

- D. Were my students engaged and/or focused?
 - If so:
 - a. What tells me that they were?
 - b. What concepts were we covering?
 - c. What precisely were they engaged with and/or focused on? (i.e., video clip, documentary, debate, small group discussion, whole class discussion)
 - d. Were there unexpected moments of engagement, i.e., in group discussion, that I recognized and incorporated?
 - If not:
 - a. When did I lose them?
 - b. Why did they disengage/lose focus?

- E. Did I integrate formative assessment of student learning throughout the “lecture”?
 - a. What did I do?
 - b. Did these assessments suggest to me that they understood the key concepts? If not, was I prepared to alter my plan in response?

- F. Did I request feedback from the students on their learning experience in this class? i.e.:
 - a. Submission of an “aha” moment they had
 - b. Informal summary (point form) addressing two or three concepts covered
 - c. Five (ten) minutes for “debriefing” at the end (of class or topic)—“*What*” are your questions? (not “Are there any questions?”)
 - d. Refer students to an online survey (e.g., Blackboard learning system, toofast.ca).

- G. Some things to consider for the next class (modifications to consider when teaching this chapter again):
 - a. What worked really well, and why?
 - b. What could/should/might I do differently next time to improve student engagement and learning?

- H. What did I learn about this topic? What insights did I gather from my students? Were any of those insights surprising to me?

- I. What did I learn about my teaching, and what can I do to modify my teaching as a result?

8. WHAT OTHER RESOURCES ARE AVAILABLE? [Supplementary Resources]

American Statistical Association. Available at <http://www.amstat.org/>.

Brock, Deborah, Rebecca Raby, and Mark P. Thomas (eds). 2012. *POWER and Everyday Practices*. Toronto: Nelson Education Ltd. (See Chapter 8, “Science as Culture,” by Aryn Martin.)

Creative Research Systems. Available at <http://www.surveysystem.com/sdesign.htm>.

Designing a Study in Sociology or Human Behavior. Available at http://www.sciencebuddies.org/science-fair-projects/project_ideas/Soc_howto_observe_survey.shtml

Determining the Research Design. Available at [https://www.boundless.com/sociology/textbooks/boundless-sociology-textbook/sociological-research-2/the-research-process-26/determining-the-research-design-168-7446/Doing Research in Sociology \(University of Waterloo\). Available at <http://129.97.58.10/discipline/sociology/research.html>](https://www.boundless.com/sociology/textbooks/boundless-sociology-textbook/sociological-research-2/the-research-process-26/determining-the-research-design-168-7446/Doing+Research+in+Sociology+(University+of+Waterloo).+Available+at+http://129.97.58.10/discipline/sociology/research.html).

Free Resources for Program Evaluation and Social Research Methods. Available at <http://gsociology.icaap.org/methods/>.

Statistics Canada. Available at <http://www.statscan.gc.ca>.

Tavares, Tonya. 2008. "Analysis of Students' Misconceptions of Research Methods in Relations to Thinking Style." University of Rhode Island. Available at <http://digitalcommons.uri.edu/srhonorsprog/102/>.

Thompson, Linda. 1992. "Feminist Methodology for Family Studies." *Journal of Marriage and the Family*, Vol. 54, pp. 3–18.

Understanding Science. Website developed by the University of California. Available at <http://undsci.berkeley.edu>.

Watts, Duncan J. 2011. *Everything is Obvious: Once You Know the Answer*. New York: Crown Business.

9. QUESTIONS TO CONSIDER WITH SUGGESTED ANSWERS

1. What is the connection between objectivity and subjectivity in sociological research?

Researchers require objectivity in their study of subjects and issues of interest in order to present scientific findings unbiased by personal values and opinions. Subjectivity is necessary because it envelops the creative insight and personal values of the researcher that guides (determines) the subject of inquiry.

2. What criteria do sociologists apply to select one method of data collection over another?

Sociologists must consider the need for reliability, validity, generalizability, and causality for the research findings all within time and monetary constraints. The criteria are a function of the issue under examination. Each method has advantages and disadvantages; therefore, sociologists must ask themselves, "What would provide the best information?" A literature review on past and current research on the subject should shed some light on the decision.

3. What are the methodological differences between various methods of data collection?

Table 2.4 (p. 61 of the text) provides a summary.