



# 10

## The Investigative Process

### AIMS OF THE CHAPTER

This brief chapter introduces assignments involving library research, field-work, and laboratory experiments. It explains the basic process of gathering information to think about and analyze before coming to a conclusion and making a written statement. These kinds of research assignments are then examined in more detail in Chapters 11 and 12.

### KEY POINTS

1. In doing research you find new subjects and events to bring back into class discussion.
2. Research can be done in the library, in the field, and in the laboratory. Each kind of research provides a different kind of information and is carried out according to different procedures.
3. Research projects are driven by underlying questions or problems. The basic issue needs to be focused into an investigative question that will be explored by examining a specific research site. Research design brings together specific concepts, questions, and methods. Results are presented in a format appropriate to the subject.

### QUESTIONS TO THINK ABOUT

- When have you found out something on your own that went beyond what was taught in class? How did you find it out? Were you able to present your finding to the teacher or class? In what form did you present it?
- What research have you heard about that you admire? What do you know about how that research was carried out, by whom, and with what specific findings? What do you find interesting or important about that research?

- What research have you heard of that strikes you as silly or useless? Why do you think so? What might the researchers have been thinking that made the research seem worth doing?
- What kind of research is most common for the fields you are studying? Why is this research useful for each of those disciplines or professions? Where do researchers usually go to carry out this research? What methods do these researchers usually use?
- With whom do researchers in your field usually share their research findings — with other researchers, professionals serving clients, the public, or students? What means do these researchers use to present their findings?

Sometimes coursework sends you out of the classroom to look at something. You may observe ecosystems or work on a political campaign. You may interview survivors of a recent disaster or search old newspapers in the library. You may test an electric generator or run a psychological experiment concerning people's visual perception. In each of these cases you investigate the world to understand some aspect of it better, and then you write up the results of that investigation so that you can bring it into the conversation with your instructor, classmates, and academic discipline.

You may also go outside the classroom to help solve real problems — engineering design problems, community social problems, the problem of educating students in the primary and secondary schools, the problem of helping clean up the environment, or the problem of getting a candidate elected. Then you may bring back your solutions to be discussed and examined in class. Presentations of problems and their solution are discussed in Chapter 14. In this and the next two chapters we focus on the processes of investigating, describing, and understanding.

## The Three Sites of Investigation: Library, Field, and Laboratory

Three primary ways to find out more about the world outside the classroom are through library work, fieldwork, and laboratory work. These three sources provide the material for most investigations at all levels of the professions and disciplines.

In library work you examine the records of past events and the thoughts and analyses done by others: that is, you draw on how others have represented events and ideas. By using all that is in the library, the classroom dis-

cussion can potentially include all that has been discussed by humans. A modern library is truly a wonderful thing, making available the entire history of recorded thought and information.

## The Library

In the library, it is easy to get lost in piles of words and books or in avalanches of electronic data available on CD-ROM and on-line databases. But these records are not just bits of printed paper and electronic bits; they are the recorded observations and thoughts of observers, scholars, researchers, and thinkers throughout history, as well as the statistics and facts collected by governments and other organizations, the collected public representations of news in magazines and newspapers, and the collected debates over politics. Even the smallest college library has a wide selection of such materials, and the larger university libraries are amazing collections of all that we have learned and known, along with those things we no longer believe. Moreover, with microfilm, CD-ROM, and on-line databases, even small libraries have access to extensive collections. Finally, through interlibrary loan you have access to the resources of major research libraries no matter how small your library is. The library may look like just another building with a lot of books, but a great portion of the world is represented there, as gathered and drawn by the people most involved in making, observing, and thinking about that world.

## The Field

In fieldwork you gather data about real events as they unfold using the methods and stance of your discipline. You go out into the messy world —

Libraries offer access to the thoughts, knowledge, and records of people in many countries by many authors.

Image removed for copyright reasons.

the “field” — to see what is going on for yourself. But you don’t go out naive and unarmed; you bring with you a disciplined way of observing. Concepts give names to and identify what you are seeing and problems to solve. Tools for observation — whether instruments like Geiger counters, psychological texts, or ways of looking and note taking as carried out by anthropological ethnographers — help you notice, characterize, and record what you are seeing. Disciplines also provide methods of analysis to help you observe more closely, and what you see may send you back to look for more details to support patterns that emerge in your analysis.

The total effect of these disciplinary tools is to help you see more than an unprepared observer would see. Then you gather and record that information in ways that will be useful and persuasive for the academic discussion that occurs when you return to the university. Your fieldwork then can enter as another voice in the disciplinary discussion: “This is what I have seen and recorded and interpreted and this is how it adds to, challenges, or contradicts what other people have seen or thought.”

## The Laboratory

In laboratory work you observe special events created to display certain phenomena so that you can resolve specific questions. In a sense you bring back a piece of the messy world to examine under less confusing conditions. The laboratory conditions try to remove disturbing factors that might influence the phenomena you are investigating. You design them to highlight just a few factors you are able to control so that you can get clean and focused information about this representative piece of the world. You then use that information to see how well it can describe events once they are thrown back out in the confusion of the world. If the pattern you notice in the relative calm in the laboratory is so firm or robust to also hold true out in the less controlled world, then you have found a significant pattern.

## Investigative Work in Courses

In asking you to take these excursions beyond the walls of the classroom, teachers may have several motives:

- To teach you disciplinary methods of gathering information about the world. Through your own experience you find out how a chemist discovers the characteristics of materials or how a sociologist diagnoses problems in a dysfunctional family.
- To help you confront material that interests you using the investigatory and intellectual tools of the subject. You learn to approach significant issues as a disciplined professional would.
- To bring real and immediate cases back into the classroom to enrich the discussion of the course. Your research into the history of big business

sports could add much to the discussion of an economics class; your fieldwork with a film production crew could help illustrate the practical meaning of concepts learned in film production classes.

## Issues in Investigation

To gain information that will tell you something useful and important, you first think about what you want to find out and why. In all three methods of investigation, you have several preliminary issues to resolve before you rush out with your note pad. These provide an underlying approach to investigative problems, which then can be elaborated through methods appropriate to each investigative technique and each disciplinary domain.

### The Basic Problem or Question

This is the fundamental issue you hope to understand or address by your research. Direct and bold underlying questions, such as “Why do people join gangs?” or “How can computers facilitate classroom instruction?” underline the importance of your work and keep the details of your investigation in perspective. Although your investigation is not likely to answer these questions fully, your results may help you understand them.

### The Focusing or Specifying Question

This takes your fundamental question and focuses it on a more specific problem. For example, the basic question, Why do people join gangs? can be specified in a variety of ways: What economic or emotional factors influence gang membership? What demographic factors characterize gang members? What influences a good student to join a gang? Does the presence of several gangs in a neighborhood influence whether youth will join gangs? At what age do youth start to affiliate with gangs, and what is the path by which they get involved?

Similarly, the question on computers in the classroom can be specified in many ways: How have electronic bulletin boards or e-mail groups been used in college classrooms? What happens when several classes are linked together in electronic discussion? What learning occurs when students use computer simulations of economic processes? How does word processing facilitate writing in college classrooms? Are any students turned off by computer use in classrooms? Does the use of electronic media interfere with or facilitate the relationship between student and teacher? How do multimedia presentations affect different kinds of learning? What happens to motivation in language learning when all student activities are computer mediated?

These more focused questions will begin to suggest useful information that would help you understand the issue. They are small enough to make

some headway on while still being important enough to tell you something significant.

## The Investigative Site

This is a specific incident, place, system, or phenomenon that provides an opportunity to investigate the specifying question. Ideally this is a site that puts the issues in sharp relief, more than other sites. It should also be a site to which you have access. To investigate the process by which a young person is drawn into a gang, for example, you may know people who were formerly or are currently in gangs and would be willing to talk about the experience. Even better, if they have siblings who did not join the gang, you could get several perspectives on what happened to the one person and compare that experience with those of the other children, some who resisted the draw of the gang.

If you are interested in studying computers in the classroom, there may be some course that is introducing new technology. Perhaps the basic economics course, for which you are enrolled, is introducing a market simulation program to give students practical experience in how markets operate under various conditions. This would provide a wonderful opportunity not only for you to experience the new technology but also to interview the professor. You could also observe what happens in the class and interview students.

The choice of a site, of course, must be determined by what is available — what is in your college library, what laboratory facilities you have available, and what field sites you can conveniently get into. But once you have a good grasp of your fundamental and specifying questions, you may notice many possibilities for research sites and how you could use them.

## The Investigative Design: Concepts, Questions, Method

To decide exactly what to look for in your research site and how to gather your data, you develop a research design. First, after thinking about the possibilities of the site, you think about which concepts are likely to help you describe, define, and understand the situation. These investigative concepts must be relevant to the kind of information that you can gain from your site. For example, if you have only demographic data about gang memberships, concepts referring to class, economics, race, and family size might be most relevant; concepts relating to psychological feelings would be less relevant. On the other hand, if the research site allows for personal interviews that may reveal something about feelings, then psychological concepts may be most useful.

Often the theory and research you are learning about in class will provide a relevant range of concepts. So if you are working on the process of gang membership for a sociology course, you may want to draw on the concept of *reference group* — the group of people who provide the individual's measure of self-value. If you are studying the same material for a psychology course, you might want to use concepts of *anxiety* and *threat*.

The design then narrows your research question down to a concrete question about the site. This investigative question should apply the investigative concepts to the specific site to tell you exactly which data you are looking for. So if you are interested in the role of emotions, particularly anxiety, on gang membership, you might want to ask, “Exactly what threats did new gang members feel before they joined the gang, and how did joining the gang affect those feelings?” If, instead, you are interested in the role of reference groups in encouraging people to affiliate with gangs, you might ask, “What did individual youths do to seek approval from the gang members? How did the gang members respond to these efforts for approval?”

Each set of problems and concepts calls for its own appropriate methods of investigation and procedures for interpreting the data. The gang study about the effect of reference group behavior might proceed largely by interview. You would frame questions around issues of how members learned to fit in with the gang and what they got out of it. But since you are dealing with an obviously important and sensitive subject, you might want to have largely positive and open-ended questions, letting the interviewees choose what to tell you. Because the matter is so personal, you would not want to use too many technical terms and concepts. You might use them to plan the questions and later analyze the responses, but in the actual interviews you need to find friendly and common-sense ways to encourage people to tell you their story.

On the other hand, in studying computer simulations in the economics class, depending on your investigative question, you might want to get test scores of students who used the simulations and those who didn’t. You might want detailed descriptions of what happened in classes that did and did not use the simulations, or you might want students to fill out attitudinal surveys telling whether they liked using computers in that class.

All these decisions are part of the design. Each field has developed its own typical research designs — specific criteria and procedures for finding out about the world that are aimed at making the data most useful for the kinds of problems they investigate and the kinds of ideas they have developed. In upper-division courses of your major, perhaps in courses on research methodology, you will learn the more specific methods of investigation developed in your field.

## The Investigative Report

The report on your findings will address the following questions:

- *What is the interest or importance of what you found out?* This question generally is answered in the introduction.
- *How did you find out, gather, or observe the information?* In field and laboratory work this is often described explicitly in a “methods” section (see pages 225-226). In library research, the sources of your information are usually presented through citations, either in footnotes or in a bibliography (see pages 242-247).

- *What did you find?* In scientific work this is usually presented in a “results” section (see pages 267-269). In humanities writing your findings generally make up the main body of the essay.
- *What are the meaning and implications of what you found?* In scientific writing, meanings and implications are usually presented in separate “discussion” and “conclusions” sections. In humanities writing, the meaning and implications may be intermixed with the main presentation of the findings; the final paragraphs, however, usually focus on developing meanings and conclusions of the research.

The first and last questions (about importance and about meaning) connect your research with the issues and concepts of the course or discipline. They prompt you to think about what you have found in terms of the discussion that has been going on all term and to present your work in relation to that discussion. If you pursue those two questions energetically, your report will clearly relate your research methods and findings to the issues of the course.



Locate an on-line journal or abstract service for some research field that interests you. After examining articles or abstracts, briefly describe some kinds of research being done in the field and the kinds of methods used.