CASE STUDY METHODS

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By now, the case study method has attained routine status as a viable method for doing education research.[1] Other methods include but are not limited to surveys, ethnographies, experiments, quasi-experiments, economic and statistical modeling, histories, research syntheses, and developmental methods.[2] Summary Point No. 1: *Compared to other methods, the strength of the case study method is its ability to examine, in-depth, a "case" within its "real-life" context.*

This chapter of *Contemporary Methods* gives you a running start in knowing how to use the case study method, highlighting a few basic considerations. The main considerations have been condensed even further, into a series of "summary points," the first having just been noted above. The chapter then concludes with discussion guides for five common "worries" about using the case study method. However, the compactness of the chapter should not mislead you about the real challenges in doing case studies. For more help and greater detail on the method, you need to refer to other, more extensive works.[3] As an aid, key terms in this chapter have been *italicized*, to enable you to refer to particular parts of these other works.[4]

When to Use the Case Study Method

Case study research enables you to investigate important topics not easily covered by other methods. Conversely, other methods cover many topics better than does case study

research. The overall idea is that different research methods serve complementary functions. Your study might even use multiple methods that include the case study.[5]

The distinctive topics for applying the case study method arise from at least two situations. First and most important (e.g., Shavelson and Townes, 2002, pp. 99-106), the case study method is pertinent when your research addresses either a descriptive question (*what* happened?) or an explanatory question (*how* or *why* did something happen?); in contrast, a well-designed experiment is needed to begin inferring causal relationships (e.g., whether a new education program had improved student performance), and a survey may be better at telling you *how often* something has happened.

Second, you may want to illuminate a particular situation, to get a close (i.e., in-depth and first-hand) understanding of it. The case study method helps you to make direct observations and collect data in natural settings, compared to relying on "derived" data (Bromley, 1986, p. 23)—e.g., test results, school and other statistics maintained by government agencies, and responses to questionnaires. For instance, education audiences may want to know about a high school principal who had done an especially good job, or about a successful (or unsuccessful) collective bargaining negotiation with severe consequences (e.g., a teachers' strike), or about everyday life in a special residential school. You could use other methods, but the case study method will go far in serving your needs.

BOX 1 lists some typical examples of case study topics in education. To begin understanding the case study method, for each topic you should ask: what is the "case"

(*unit of analysis*), and what related subtopics need to be covered as part of the related case study? Take the first topic in **BOX 1** as an example. The "case" would be the single student. The related subtopics would include the student's school, family, and friends. You might think of these subtopics as key contextual conditions.

Summary Point No. 2: *The case study method is best applied when research addresses descriptive or explanatory questions and aims to produce a first-hand understanding of people and events.*

An Essential Skill for Case Study Investigators

In many ways, doing case study research will not be different from using other research methods.[6] All methods require reviewing the literature, defining research questions and analytic strategies, using formal data collection protocols or instruments, and writing good research reports. However, case studies call for at least one additional skill on your part.

Unlike most other methods, when doing case studies you may need to do data collection and data analysis together. For instance, a field interview of one person may produce information that conflicts with that from an earlier interview. Doing the interview is considered data collection, but surfacing the conflict is considered data analysis. You want that analysis to happen quickly, so that you can modify your data collection plans while still in the field—either by re-interviewing the earlier person or by seeking to find a third source to resolve the conflict.

The need to do data analysis while still collecting data produces huge differences compared to using other methods. With both surveys and experiments, for instance, data collection is likely to occur as a formal stage separate from data analysis. One stage usually gets done before the other starts. The data collection also may be delegated to a research assistant or a trained interviewer, neither of whom may have anything to do with the later data analysis. Similarly, data analysis may be in the hands of a senior investigator who had little direct involvement with the data collection.

Do not take for granted the ability needed to do data analysis while collecting data. The implications, compared to other methods, also are huge. You, as a case study investigator, need to master the intricacies of the study's substantive issues while also having the patience and dedication to collect data carefully and fairly—potentially hiding (if possible) your own substantive thoughts. For instance, in case studies you might have to ask questions, during a field interview, whose answers you believe you already know. Do you think you can ask the questions fairly? Summary Point No. 3: *A key demand of the case study method is the investigator's skill and expertise at pursuing an entire (and sometimes subtle) line of inquiry at the same time as (and not after) data are being collected*. A good case study investigator may even appear to mimic the role of a good detective. You ought to know whether you have the requisite ability and also know how to build even further your skills in this direction.

Three Basic Steps in Designing Case Studies

The first step, already discussed in relation to **BOX 1**, is to define the "case" that you are studying. Arriving at even a tentative definition helps enormously to organize your case study. Generally, you should stick with your initial choice, because you might have reviewed literature or developed research questions specific to this choice. However, a virtue of the case study method is the ability to redefine the "case," after collecting some early data. Beware when this happens—you may then have to backtrack, reviewing a slightly different literature and possibly revising the original research questions.

A second step calls for deciding whether to do a single case study or a set of case studies. The term "case study" can refer to either *single-* or *multiple-case studies*. They represent two types of *case study designs*. You also can choose to keep your case *holistic* or to have *embedded* sub-cases within an overall holistic case. For example, your holistic case might be about why a school system had implemented certain student promotion policies, and the system's classrooms could serve as embedded "sub-cases" from which you also collect data. Holistic or embedded case studies represent another two types of case study design, which can exist with either single- or multiple-case studies—so that you should think of the two-by-two combination producing four basic designs for case studies.

Of these combinations, the most intriguing are the ones contrasting single- and multiple-case studies. Focusing on a single case will force you to devote careful attention to that case. However, having multiple cases might help you to strengthen the findings from your entire study—because the multiple cases might have been chosen as:

replications of each other, deliberate and contrasting comparisons, or hypothesized variations.

A third step involves deciding whether or not to use *theory development* to help to: select your case(s), develop your data collection protocol, and organize your initial data analysis strategies. An initial theoretical perspective about school principals, for example, might claim that successful principals are those who perform as "instructional leaders." A lot of literature (which you would cite as part of your case study) supports this perspective. Your case study could attempt to build, extend, or challenge this perspective, possibly even emulating a hypothesis-testing approach. However, such a theoretical perspective also could limit your ability to make discoveries—i.e., to discover from scratch just how and why a successful principal had been successful.

In general, the less experience you have had in doing case studies, the more that you might want to adopt some theoretical perspectives. Without them, and without adequate prior experience, you might have trouble convincing others that your case study had produced findings of any value to the field. Conversely, highly experienced case study investigators may deliberately avoid adopting any theoretical perspectives, hoping to produce a "break the mold" case study.

Summary Point No. 4: *A good case study design, at a minimum, involves: defining your case, justifying your choice of a single- or multiple-case study, and deliberately adopting or minimizing theoretical perspectives*.

Choosing Specific Persons, Groups, or Sites to be Your "Case"

Your case study will be about one or more actual real-life cases. While you already may have defined your case conceptually, as in the seven examples previously presented in **BOX 1**, you may still need to select the actual real-life case(s) to be studied. Selecting the case(s) serves as possibly the most critical step in doing case study research (Stake, 1994, p. 243). The process poses common problems that you can nevertheless overcome with adequate thought and effort. One of the most common misconceptions for you to overcome is believing that case studies are to represent a formal "sample" from some larger universe, and that generalizing from your cases depends on statistical inference (*statistical generalization*); instead, generalizing from case studies reflects substantive topics or issues of interest, and the making of logical inferences (*analytic generalization*).[7]

When doing a single-case study, you may have chosen to study an *extreme or unique* case, or even a *revelatory* case—e.g., the workings of a school-based gang—and you may have been poised to study this case from the outset. Or, you already may be aware of the case to be studied because of some special access that you have for collecting data about that case. However, in other situations (e.g., in studying the *typical* case, the *critical case*, or a *longitudinal* case) there may be several if not many qualified candidates, and you have to select from among them. Under this circumstance, you should conduct a formal *case study screening* procedure. The screening can be based on reviewing documents or querying of people knowledgeable about each candidate. Useful screening criteria include: the willingness of key persons in the case to participate in your study, the likely richness of

the available data, and preliminary evidence that the case has had the experience or situation that you are seeking to study, even if the case is to be a *typical* case. Summary Point No. 5: *The case selection or screening goal is to avoid the scenario whereby, after having started the actual case study, the selected case turns out not to be viable or to represent an instance of something other than what you had intended to study.*

When doing a multiple-case study, (even a *two-case* case study), all of these considerations are relevant, plus certain cross-case issues. These have to do with your logic of inquiry. You should decide whether the two (or more) cases are to represent confirmatory cases (i.e., presumed replications of the same phenomenon), contrasting cases (e.g., a success and a failure), or theoretically diverse cases (e.g., a primary school case and a secondary school case).[8] With three or more cases, audiences also like to see some geographic, ethnic, size, or other related variation among the cases. None of the cases should be considered "controls" for each other, in the same sense of the term "control group," because in case study research you do not manipulate "treatments" or control any real-life events.

Despite these complications and extra work, multiple-case designs have important advantages for you to consider. First, you will be able to show your audience that you can practice the complete cycle of case study research (e.g., design, selection, analysis, and reporting) with more than a single case, reducing suspicion that your skills were limited to a single case that also might have been personally special to you in some way. Second, you would be able to respond to a common criticism of single-case studies—that they are

somehow unique and idiosyncratic and therefore have limited value beyond the circumstances of the single case. Third, you will have a modest amount of comparative data, even if the cases were chosen to be confirmatory cases, helping you to analyze your findings.

Varieties of Sources of Case Study Data

Case study research is not limited to a single source of data, as in the use of questionnaires to carry out a survey study. In fact, good case studies benefit from having *multiple sources of evidence*. **BOX 2** lists six common sources of evidence. You also may use focus groups and other sources besides these six. The main concern is not that any particular source be used. Rather, Summary Point No. 6: *In collecting case study data, the main idea is to "triangulate" or establish converging lines of evidence to make your findings as robust as possible.*

How might this *triangulation* work? The most desired convergence occurs when two or more independent sources all point to the same set of events or "facts." For example, what might have taken place at a school's faculty meeting might have been reported to you (independently) by both the teachers and the principal, and the meeting also might have been followed by some documented outcome (e.g., issuance of a new policy that was the presumed topic of the meeting). You were not able to be at the meeting yourself, but having all these different sources gives you more confidence about concluding what transpired than had you relied on a single source alone.

Triangulating is not always as easy as the preceding example. Sometimes, as when you interview different teachers and the principal, all appear to be giving corroborating evidence about how their school operates—e.g., how assistant teachers are used in the classroom. But in fact, they all may be echoing the same institutional "mantra," developed over time for speaking with outsiders (such as parents and researchers).

This collective "mantra" may not necessarily coincide with the school's actual operations. Reviewing the literature may help you to anticipate this type of situation, and making your own direct observations also may be extremely helpful. However, when relying on direct observations, note another problem that can arise. Because you may have pre-scheduled the classroom observations, a teacher may have decided to change the instructional practices just for your visit. So, getting at the actual role of assistant teachers in the classroom, or at some other school operations, may not be as easy as you might think.

Nevertheless, you always will be better off by using multiple rather than single sources of evidence. This methodological preference again raises the need for certain capabilities in using the case study method: your ability to work skillfully with multiple or varied sources of evidence and to be expert at handling different kinds of evidence.

Some researchers, either by training or preference, can only deal comfortably with a single type of evidence—e.g., interviews. Such persons may give too much weight to what they hear others saying, may not be able to conduct thorough searches for other relevant evidence, and may not pay sufficient attention to other forms of evidence. In this example,

the ensuing case study is likely to be based on "verbal reports"—e.g., what the principal says happened rather than what actually might have happened. You should avoid relying on such a narrow evidentiary base. Your study in this example would actually be an open-ended interview study (a variant of a survey), not really a case study. One way of telling how skilled you are in collecting multiple sources of evidence is to observe your interest in different data collection techniques—do you keep up with the state-of-the-art on more than a single technique?

Regardless of its source, case study evidence also can include both *qualitative and quantitative data*.[9] Qualitative data may be considered non-numeric data—e.g., categorical information that can be systematically collected and presented; quantitative data can be considered numeric data—e.g., information based on the use of ordinal if not interval or ratio measures. Both types of data can be highly complex, demanding analytic techniques going well beyond simple tallies.[10]

As with your ability to handle different sources of evidence, you also should be comfortable and adept at working with both qualitative and quantitative data. For example, some case studies—e.g., a case study of a school district's student achievement trends over time—might be heavily quantitative. Other case studies—e.g., the strategies underlying a superintendent's initiation of a combination of all-day kindergarten, early literacy programs, and advanced placement courses to spur education reform—might be heavily qualitative. Yet other case studies—e.g., showing how student achievement had improved in conjunction with the preceding combination of initiatives—might be heavily quantitative

and qualitative.

A final but essential comment on case study evidence: You need to present the evidence in your case study with sufficient clarity to allow the reader to judge independently your interpretation of the data. Older case studies frequently mixed evidence and interpretation. This practice may still be excusable when doing a unique case study or a revelatory case study, because the descriptive insights may be more important than knowing the strength of the evidence for such insights. However, for most case studies, mixing evidence and interpretation may be taken as a sign that you do not understand the difference between the two, or that you do not know how to handle data (and hence proceeded prematurely to interpretation).

In doing your case study, you should follow the classic way of presenting evidence: arraying data through tables, charts, figures, other exhibits (even pictures), and vignettes. Footnotes, quotations from interviews, chronologies and narrative questions-and-answers also are suitable—as long as these are set apart from your interpretive narrative. Whatever the way of presenting the data, the structure or format of the array needs to reflect an overarching concern for presenting data *fairly*. A brief description of how the evidence was collected, including use of a formal data collection tool (*case study protocol*), also is helpful. Summary Point No. 7: *Case studies should present their data formally and explicitly, in a variety of data arrays set apart from the case study narrative.*

Ways of Analyzing Case Study Data

If selecting your case(s) to be studied is the most critical step in doing case study research, analyzing your case study data is probably the most troublesome. Much of the problem relates to false expectations: that the data will somehow "speak for themselves," or that some counting or tallying procedure (e.g., "Q-sorts," regression models, or factor analyses) will be sufficient in producing the main findings for the case study. Wrong.

You actually made some key assumptions for your analysis when you defined your research questions and your "case." Was your motive in doing the case study mainly to address your research questions? If so, then the techniques for analyzing the data might be directed at those questions first. Was your motive to derive more general lessons for which your case(s) are but examples? If so, the techniques might be directed at these lessons. Finally, if your case study was driven by a discovery motive, you might start your analysis with what you think you have discovered.

Now comes a "reverse" lesson. Realizing that key underlying assumptions for later analysis are in fact made at the initial stages of the case study, you could have anticipated and planned the analytic strategies or implications when conducting those initial stages. Collecting the actual data may lead to changes in this plan, but having an initial plan that needs to be revised (even drastically) may be better than having no plan at all.

Several analytic techniques can help and can be planned during the case study design. One possibility is to stipulate some pattern of findings at the outset of your case study. Your analysis would then consist of the analytic technique of *pattern-matching* the

collected evidence against the initially stipulated pattern. For example, studies of educational reform can start with some hypothesized patterns: schools must implement improved (e.g., "standards-based") curricula and instruction; school systems must redesign their tests or assessments to cover the concepts in the new curricula and instruction; new inservice opportunities must be provided to teachers and principals that coincide with the new curricula and instruction; and the preservice training of new teachers also must incorporate these conditions. Your case study would collect data to determine whether this pattern of educational conditions had actually occurred—and the degree to which the conditions were substantively aligned.

Other analytic techniques include: *explanation-building*, *time-series analysis*, the use of *logic models*, and *cross-case synthesis*. None of them comes with any formulas, although statistical calculations can be part of them. For instance, one form of logic model is a hypothesized sequence of events that should occur over time. In this example, suppose your case study of school improvement stipulated the following five-stage sequence: a) mentor teachers receive training on an academic subject; b) the mentor teachers lead new training sessions for other teachers; c) the mentor teachers provide classroom assistance for the other teachers; d) the instructional practices of the other teachers subsequently change; and e) student performance improves. If you were studying the sequence as part of your case study of an entire school district, your analysis would trace the actual sequences and assess the reality of the predicted behavioral changes. Depending upon the available data, part of your analysis could be represented by a structural equation model representing the

five-stage sequence—representing a statistical calculation within your case study.

For case study research, the challenge of doing analysis stretches one important step further—and well beyond selecting and planning for a particular analytic technique: The presentation of your analysis can interact with the structure or composition of your case study report. In the preceding example, the assumption was that your report would present the data and then carry out the analysis, including the structural equation model. Such a *linear sequence* mimics the reporting of most quantitative research (i.e., hypotheses→ method→data analysis→findings→interpretations and conclusions). However, for case study research, the linear sequence is not the only way. You also might present your analysis throughout the reporting of your case study—as a history is presented or as much sociological fieldwork has been reported.

Although he writes about doing ethnography (not case studies), Van Maanen (1988, p. 30) succinctly captures the essence of this latter type of reporting. He says that, while a report may be...

> *crammed with details and facts, it also conveys an argument and an informing context as to how these details and facts interweave.*

An obvious example would be to tell your story in chronological sequence: "in the beginning..." You would present (fairly) and discuss the data about this initial period of time. You would then present data and discuss the next period of time. You would repeat the process as many times as needed. For each period of time, the underlying themes might have been developed from your research questions, stated at the outset of your case study and now being used as the interweaving themes. Following this iterative process, be

aware that you are building an argument, hoping to convince the reader that your rendition of reality is correct. As a final note, your ability to be convincing increases the more that you also incorporate *rival explanations* or *alternative perspectives* into your analysis.

Summary Point No. 8: *Case study analysis can rely on several techniques whose use might even be anticipated during the initial design of the case study; the analysis can be presented throughout a case study, as you gradually build an argument that addresses your research questions*.

Composing Case Study Reports

As you have just seen, the structure of a case study report can be heavily influenced by your analytic strategies. More generally, because the report does not have to follow any particular form, the opportunity to compose case studies can be more exciting and call on greater creativity than reporting about research that has been based on most other methods. The other side of the coin is that if you have difficulty composing, the opportunity can heighten any uncertainty you might have had in doing case study research in the first place, leading to writer's cramps and eventually even despair and desperation. Make no mistake about it: if you want to do case studies, be sure that you also enjoy composing. In doing any given case study, you can and should test your compositional skill early: Try to compose some substantive material *even before completing your fieldwork.*[11] Is the composition easy and smooth? Do your colleagues think the composition is promising?

To get some idea of the varieties of *case study compositions*, **BOX 3** contains an extensive list of books readily accessible to most of you. Covered are 44 individual case studies (mostly about schools and school systems; equally large lists could have been amassed on curricula, student learning, teaching and instruction, leadership, and other topics). Keep this list as a quick future reference, whether you end up doing your own case study or not.

For Further Discussion

Five common worries about doing case study research (not including the composing of the case study report) serve as a summary of this entire chapter (see **BOX 4**). Engaging in the discussion points at the end of each worry will help you overcome it. You will then be well on your way to doing a successful case study.

BOX 1

Examples of Possible Case Studies in Education

1. How a Limited-English-Proficient student struggles to do well in school, also preserving relationships to family and friends outside of school

2. How teachers form and make use of informal planning groups to improve instruction

3. Implementing a 5th grade violence prevention program and tracing the results

4. The actions taken by a low-performing school, over the course of only a few years, to improve its performance markedly

5. Why a school-business partnership helped improve student performance by providing challenging out-of-school opportunities

6. What happens in a pre-school program that prepares children for their later schooling and education

7. How a school "choice" policy (whereby parents can choose the school their children will attend) works in a school system

BOX 2

Common Sources of Evidence in Doing Case Studies

1) Documents (e.g., newspaper articles, letters and e-mails, and reports)

2) Archival records (e.g., student records)

3) Interviews (e.g., open-ended conversations with key informants)

4) Direct Observations (e.g., observations of classroom behavior)

5) Participant-Observation (e.g., being identified as a researcher but also filling a real-life role in the scene being studied)

6) Physical Artifacts (e.g., computer printouts of students' work)

BOX 3

Varieties of Case Studies on Schools and School Systems

Single Case Studies of Schools or Local School Systems

Anyon, Jean, ***Ghetto Schooling: A Political Economy of Urban Educational Reform***, Teachers College Press, New York, NY, 1997—student equity in the Newark (NJ) school system.

Bryk, Anthony S., et al., ***Charting Chicago School Reform: Democratic Localism as a Lever for Change***, Westview Press, Boulder, CO, 1998—7 chapters, one containing a statistical analysis; Bryk, Anthony S., David Kerbow, and Sharon Rollow, "Chicago School Reform," in Diane Ravitch and Joseph P. Viteritti (eds.), ***New Schools for a New Century: The Redesign of Urban Education***, Yale University Press, New Haven, CT, 1997, pp. 164-200—a shorter and earlier version of the same case study.

Gross, Neal, et al., ***Implementing Organizational Innovations: A Sociological Analysis of Planned Educational Change***, Basic Books, New York, NY, 1971—implementing a new instructional method in a single elementary school.

McAdams, Donald R., ***Fighting to Save Our Urban Schools...and Winning!: Lessons from Houston***, Teachers College Press, New York, NY, 2000—extensive citations to local news articles help to offset potential biases of author, who was a key participant in the case study.

Single Case Studies of State Education Systems or of Educational Programs

Whitford, Betty Lou, and Ken Jones (eds.), ***Accountability, Assessment, and Teacher Commitment: Lessons from Kentucky's Reform Efforts***, State University of New York Press, Albany, NY, 2000—14 chapters include 6 sub-cases inside schools and classrooms, 2 of accountability systems, and 6 other chapters on the state system.

Zigler, Edward, and Susan Muenchow, ***Head Start: The Inside Story of America's Most Successful Educational Experiment***, Basic Books, New York, NY, 1992—extensive interviews by the second author help to offset potential of the first author, who was a key participant in the case study.

"Two-Case" Case Studies

Elmore, Richard F., Charles H. Abelmann, and Susan H. Fuhrman, "The New Accountability in State Education Reform: From Process to Performance," in Helen F. Ladd (ed.), ***Holding Schools Accountable: Performance-Based Reform in Education***, The Brookings Institution, Washington, DC, 1996, pp. 65-98—comparative discussion of two state departments (MS and KY) throughout the chapter, to appreciate contrasting experiences on a topic-by-topic basis.

Lusi, Susan Follett, ***The Role of State Departments of Education in Complex School Reform***, Teachers College Press, New York, NY, 1997—separate case studies of two state departments (KY and VT.), with commonalities and differences discussed in a closing chapter.

Multiple-Case Studies

Cuban, Larry, and Michael Usdan (eds.), ***Powerful Reforms with Shallow Roots: Improving America's Urban Schools***, Teachers College Press, New York, NY, 2003—6 case studies of school systems presented in separate chapters and separately authored, with two additional chapters providing a cross-case introduction and conclusion; Yee, Gary, and Barbara McCloud, "A Vision of Hope: A Case Study of Seattle's Two Nontraditional Superintendents," pp. 54-76—one of the best documented among the 6 case studies.

Hill, Paul T., Christine Campbell, and James Harvey, ***It Takes a City: Getting Serious about Urban School Reform***, Brookings Institution Press, Washington, DC, 2000—main text is a cross-case analysis of 6 case studies, with the 6 case studies presented in an appendix and not separately authored.

Perrone, Vito, and Associates, ***Portraits of High Schools***, The Carnegie Foundation for the Advancement of Teaching, Princeton University Press, Lawrenceville, NJ, 1985—13 case studies of different kinds of high schools, each presented in a separately authored chapter.

Sirotnik, Kenneth A., and John I. Goodlad (eds.), ***School-University Partnerships in Action: Concepts, Cases, and Concerns***, Teachers College Press, New York, NY, 1988—two chapters are on "concepts" and two on "concerns," all separately authored; the other 6 chapters are case studies of individual partnerships, also separately authored.

Willie, Charles V., Ralph Edwards, and Michael J. Alves, ***Student Diversity, Choice, and School Improvement***, Bergin & Garvey, Westport, CT, 2002—of 10 chapters, three are case studies of success stories (Boston, MA; Cambridge, MA; and Lee County, FL).

BOX 4

Five Common "Worries" in Using the Case Study Method

1. How do I know if I should use the case study method to do my study?

There's no formula, but your choice depends in part on your research question(s). The more that your questions are descriptive ("what has been happening?") or explanatory ("how or why has it been happening?"), the more that the case study method will be relevant. *What are some other reasons might you cite for using or not using the case study method?*

2. How should I select the case to be studied?

You need sufficient access to the potential data, whether involving people to be interviewed, documents or records to be reviewed, or observations to be made in the "field." Given such access to more than a single candidate, you should choose the one(s) that best illuminate(s) your research questions. Absent such access, you should consider changing your research questions, hopefully leading to new candidates to which you do have access. *Do you think access should be so important?*

3. I am studying a school. What is my case: Is it the teachers? The reading program? The whole school?

The specific definition of your case again depends upon your research question(s). The least desirable question is to want to know "everything that happened." Your literature review should help lead to more specific questions of interest and they, in turn, should readily point to the appropriate definition of the case. *As a further part of defining your case, do you think you should identify a particular time period, before and after which events will be deemed irrelevant to the case, or is your case timeless?*

4. How much time and effort should I devote to collecting the case study data? How do I know whether I'm finished collecting the data?

Unlike other methods, there is no clear cut-off point. You should try to collect enough data so that: 1) you have confirmatory evidence (evidence from two or more different sources) for most of your main topics; and 2) your evidence includes attempts to investigate major rival hypotheses or explanations. *What do you think are some of the cut-off points for other methods, and why wouldn't they work in doing case study research?*

5. How do I start analyzing my case study data?

You might start with questions (e.g., the questions in your case study protocol) rather than with the data. Start with a small question first, then identify your evidence that addresses the question. Draw a tentative conclusion based on the weight of the evidence, also asking how you should display the evidence so that readers can check your assessment. Continue to a larger question and repeat the procedure. Keep going until you think you have addressed your main research question(s). *Discuss the benefit of starting with questions rather than starting with the data*.

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Endnotes

1. Hammersley and Gomm (2000, p. 1) have noted that interest in case study research had eclipsed by the late 1970s and early 1980s. Platt (1992, p. 18) made a similar observation, also noting that the case study method had all but disappeared from the popular textbooks of that time.

2. How the case study method is to be categorized among other social science methods has been the subject of extensive writing, especially in education research. For instance, an international handbook divides the various methods into scientific and humanistic research, placing the case study method under the latter (Keeves, 1988, p. 7). While no method of social research, by definition, can replicate the scientific method in the natural sciences, the present chapter is written from the perspective that *emulating* the principles of scientific research—e.g., starting with explicit research questions, using a research design to address these questions, collecting and fairly presenting evidence to support interpretations, and referencing related research to aid in defining questions and drawing conclusions—will produce stronger case study research. The humanistic tradition offers other strengths, such as emphasizing participant-observation and prolonged engagement in the field, celebrating the particular rather than the general, and becoming "experientially acquainted" with the case (e.g., Stake, 1994; and Simons, 1996).

Despite the terms 'scientific' and 'humanistic,' which are too stereotypic, the two orientations to doing case study research are not necessarily conflicting. They may be seen as differences in emphasis (e.g., Stenhouse, 1988; and Yin, 1994). However, in designing a new case study, you should be sensitive to these different orientations and whether key members of your audience have particular preferences.

3. These works include comprehensive texts (Yin 2003a and 2003b), an earlier and abbreviated version on the case study method (Yin, 1998), a paper on rival explanations (Yin, 2000), and a forthcoming case study anthology (Yin, 2004). You also should consult the contributions on case study methods (Stake, 1988; and 1997) that appeared in the earlier editions of *Contemporary Methods*.

4. See Yin (2003b) for further clarification of the italicized terms.

5. For instance, the complementarity between case studies and surveys has long been appreciated (e.g., Sieber, 1973). The recent focus on using experimental methods in education research has pointed to additional complementarities. As noted by two proponents of experimental designs using randomized assignment, case study methods can be valued "...as adjuncts to experiments rather than as alternatives to them" (Cook and Payne, 2002, p. 168).

6. A brief reminder is that this entire chapter is devoted to case study *research*, even though case studies enjoy extensive use as a *teaching* tool (e.g., Bock and Campbell, 1962; and Christensen and Hansen, 1981) and as a way of improving *practice* (e.g., Pigors and Pigors, 1961).

7. The distinction, together with the broader question of whether the main value of case studies is to render the individual case or to arrive at broader generalizations, is critical to doing case study research. Where generalization is an important goal for your case study research, and to understand more clearly the strong preference for using analytic generalization (also noting that

different writers use different labels for the same concept), consult Mitchell (1983) and Gomm et al. (2000). To understand why the statistical view is possibly an inappropriate way of generalizing from case studies and may lead to misunderstanding the value of case study research, see an incisive but little known article by Donald Campbell (1979).

8. The motive underlying the selection of multiple-cases is not different from that used by scientists initially defining a series of experiments. As with multiple experiments, multiple-case studies are not selected to represent some universe but instead to pursue a logical framework of inquiry.

9. This treatment of qualitative from quantitative research as two types of data comes out of a unitary vision that challenges the view of qualitative and quantitative research as opposing types or even philosophies of empirical research (see Yin, 1994).

10. Bob Stake (see acknowledgments) has continually emphasized the complexity of the situations and phenomenological accounts that can be represented by qualitative data. I have taken the liberty of attributing the same feature of quantitative data, which can assume the form of complex quantitative models. In both situations, the complexity is not necessarily with the analytic techniques or their mechanical operations—but rather with the logical thinking that is needed.

11. Chris Clark (see acknowledgments) reminded me of this excellent practice in his review of an earlier draft of this chapter.