PART 6

Research Designs and Methods

The first and most important condition for differentiating among the various research strategies is to identify the type of research question being asked.

—Robert K. Yin

QUESTION

44

What Are Referents, and Which Work Best With Action Research?

Compared to what? When you engage in action research, this is a question you should be asking yourself. Decisions based on data involve comparison to bring meaning to your project. There are three decision-making referents: normative, criterion, and individual. Without a planned referent, it is difficult to interpret data collected. Collecting data alone will not answer a question; you will need to choose one or more referents.

- *Normative referents* are comparisons between our participants/subjects and what might be considered normal in the larger population. Sometimes these are called "norms." For example, if I take an IQ test and score 100, it doesn't mean I answered 100 questions right. My score is compared to a large pool of people who are representative of the entire population—the norm reference. In most IQ tests, a score of 100 means I scored about the same as the average of that larger population. These normative referents are very common across disciplines.

- *Criterion referents*, in contrast, do not compare data or scores to a larger population. You can think of a criterion referent as a line in the sand. It is a predetermined level to which you can make a comparison. For example, a business might set a target growth rate of 2% for the year. At the end of that year, the comparison of interest is whether or not the business succeeded. Establishing a criterion to which you will compare data is an area of interest in many fields of study.

- *Individual referents* are perhaps the most valuable, because you are comparing people to themselves. For example, imagine the patient enters a hospital in the emergency room. A series of diagnostic measures are first taken—pulse, weight, temperature, and so on. That same patient who is later admitted to the hospital will continue to have the diagnostic measures administered. Perhaps temperature every few hours and weight every day. The data collected are used to gauge the recovery rate of the patient. Compared to their first body temperature, which may have been high, has the patient progressed toward normal body

temperature? Using an individual referent, is most meaningful when the person is the only case you are examining. Of course, tracking the temperature of a patient over time gives you an indication of relative progress toward wellness, but keep in mind that the goal temperature of 98.6 is in fact a normative referent.

Although not always a perfect fit, comparing results to normative, criterion, and individual referents gives our decisions perspective.

More questions? See questions 36, 45, and 62.

QUESTION

45

How Do I Randomly Choose My Participants?

Determining who will participate and how you choose them is critical to the success of your action research project. This is known as a sampling plan, and its purpose is to generalize to a greater population. Action researchers aren't typically concerned with generalizing to a greater, or target, population, but it is still useful to know the various approaches, so you can choose the most appropriate one for your setting.

The four approaches here generate, to varying degrees, random samples. Random sampling helps to assure you that groups (if you are using a multi-group design) are comparable. These are also called *probability samples* and are presented in order of the rigor of the random sampling design.

- **Simple random**. Select participants so that everyone has an equal and independent chance of being selected. Choose the population and flip a coin. This is typically done in observational research, because between-group differences theoretically wash out.
- **Stratified random**. A target population is defined by characteristics of interest, for example, race/ethnicity, gender, age. Then participants are randomly assigned to experimental conditions following protocols of simple randomization. This is a strong approach, because it can better assure the researcher that all groups are represented in the sample. This is especially important when there are very small groups of people with unique characteristics of interest.
- **Cluster**. Intact groups are chosen based on sharing characteristics of the targeted population. For example, you might select a cluster of hospitals or schools all serving urban areas, if that was your area of interest. Once you have clusters, you choose to randomly select participants.
- **Systematic.** Every *n*th participant from the target population is assigned to a group and may dictate an over- or under-representation of the sample. This sampling plan works well with action research.

More questions? See questions 44 and 46.

QUESTION

46

How Do I Not Randomly Choose My Participants?

There are many approaches to selecting (sampling) your participants. While selecting random samples is a common and appropriate approach in traditional and quantitative research, non-random approaches are more commonly used in qualitative and action research. The nine non-random approaches, also called *non-probability* samples, are presented in alphabetical order. No one is more rigorous than another; they are simply more or less appropriate in different contexts.

- **Concept creation**. Participants are chosen because they can help the researcher generate concept or theoretical understanding. This is clearly appropriate if you are in a concept building phase before you begin your research.
- **Convenience.** Whoever walks in off the street gets chosen. Think getting paid to do a survey when going to the mall. This isn't the greatest sampling plan, because it's hard to know who will end up in your study.
- **Critical**. Participants are chosen based on being at the extreme of a "typical" group. For example, in the field of education, a teacher action researcher might want to sample all students with autism.
- **Maximal variation.** Participants are chosen based on how different they are on a given characteristic. Think healthy versus unhealthy people. In this sampling plan, it is critical to define the characteristic. For example, what defines healthy? Once the characteristic is defined, participants can be compared on how much they differ on that characteristic and selected appropriately.
- **Opportunistic**. Participants are chosen mid-study because new information is necessary to answer your research question. For example, if you find that your chosen participants don't have the knowledge required to answer your research question, you might choose to find more participants. This is not a recommended approach, because it creates significant threats to internal validity. A better approach would be to start over.

- **Purposive.** Participants are chosen for a particular reason. Think fourth graders. They are in a particular classroom at a particular time because the school schedule dictates it. They are usually in the school because it's in the same neighborhood where they live. Neither of these is happenstance. This is the most typical sampling plan in action research. You are interested in a particular group and purposefully select them.
- **Quota.** Participants are chosen by a particular characteristic. This sounds similar to stratified random sampling, but here once a quota of participants is reached, no more data are collected from that particular strata. Data continue to be collected until each quota is reached.
- **Snowball.** Participants are chosen based on referrals from other participants. When the topic is pretty complex or unfamiliar, it is pretty common to call in a participant would have that knowledge. It is different from opportunistic in that the sampling plan is selected before data collection starts. It's an internal validity thing. Perhaps a social worker wants to interview undocumented immigrants. The action researcher may choose a snowball sampling plan. She knows three or four who are her friends, then she asks them for referrals to others, and so on.
- **Typical.** Participants are targeted chosen based on how they represent a particular group according to an outsider. Think about a small business hiring a marketing agency to provide them with a list of a particular demographic group. Maybe the small business is interested in a particular age group, with a particular salary range, in a few particular zip codes. This is a common approach, and at some point, you have probably been in one of the groups and contacted as a result.

More questions? See questions 44 and 45.

QUESTION

47

How Do I Create Groups?

Before you can understand grouping, let's first review sampling. The idea of sampling or finding a small group of people for your study arises out of the notion that you typically can't access an entire population. It is within that sample you will be creating groups.

Grouping participants is very important in action research, and those groups typically emerge from your research question. For example, a math teacher might ask, "If I expose second-grade students to flash cards two times a week, will they improve their basic multiplication math knowledge?" Clearly the primary sample will be second graders in the teacher's class. However, the action researcher might also want to add a second group of second-grade students from another class, who do not receive the flashcard intervention. In this case, you have two naturally occurring groups—one called the treatment (flash cards) and one called the control (no flash cards), and you can compare the average scores of each group after the data are compiled.

The research question might also drive you to establish different groups. In the example above, perhaps you are interested in knowing if girls and boys responded the same way to the flash card intervention. In that case, you have added a grouping variable, depicted below.

	Female Group	Male Group	Overall
Flash card group	mean score girls, with flash cards	mean score boys, with flash cards	average score, with flash cards
No flash card group	mean score girls, no flash cards	mean score boys, no flash cards	average score, no flash cards

This new grouping variable allows you to dig much deeper into the question, and you can imagine there are other ways to dig deeper.

More questions? See questions 62 and 73.

QUESTION

48

What Is a Case Study?

A case study, simply put, is a research project in which there's a single case being examined. This is a natural fit with action research where context is of paramount importance. This approach is common in the social sciences and industry. The research strategy is also used in traditional research, but is often shunned as unscientific. Traditional research seeks to generalize knowledge from research, whereas action research is concerned with practical solutions in context. In the field of education, the case might be a student, the principal, or a school. In the health sciences, this might be the patient, the staff, or the hospital. In industry, this might be the client or customer, coworkers, or the business at large. The key is there is a single entity you will examine. The entity or case of interest can vary depending on your research question.

Even in case study research, it is still important to collect multiple data points to triangulate. For example, an action researcher might want to examine the behavior of a good school principal. To triangulate the research, the researcher might want to interview and observe the principal, interview teachers, interview students, examine the school website, and send a survey home to parents.

There are a few different philosophical approaches to case study research, and scholars argue about the merits of each. In general, case study researchers do not come from a positivist perspective, but instead see research as more open-ended. They approach case study from the perspective that the researcher can't control or place bounds on the case being studied. In contrast, a constructivist approach treats the case as something that can be studied subject to constraints or boundaries. The positivist perspective might fit better with action research because it relies more directly on observation in a natural setting, and not heavily on literature and theory building. But, as mentioned, scholars argue about the merits of each perspective.

More questions? See question 64.

QUESTION

49

When and How Would I Use Interviews?

Interviews are verbal interactions between two people with the intent of collecting relevant qualitative data regarding a single participant's experience. To do this, you need a series of questions.

Interviews are appropriate when a closer interaction with participants is needed or wanted. For example, simple observation of a patient to determine level of satisfaction seems inadequate. And perhaps a survey seems insensitive. Why not ask the patient a few questions?

Interviews are particularly appropriate when you might not have a large group of people you are studying. Large groups make interviews difficult, because they are time-consuming and can yield vast amounts of data (words, in this case).

Individual interviews, and their sister, the focus group, are often analyzed with large-scale software. NVivo is the most popular and powerful. Coding responses by hand is an option if your sample size is very small. You will be looking for trends in the responses from your participants to help you make decisions and answer your research question.

More questions? See questions 50 and 51.

QUESTION

50

In General, What Are the Different Kinds of Interviews?

There are three types of interview questions.

- *Structured* interview questions are also known as standardized, patterned, planned, and formal. They are a series of predetermined questions given in the same order to different people. All responses are compared to each other on a given scoring guide, scale, or rubric. Structured interviews are typically used in a commercial setting where candidates can be compared objectively and fairly. This is particularly important in equitable hiring decisions, but not always applicable to action research.
- *Semistructured* interview questions are also known moderate, hybrid, and combined. As one would surmise, semistructured interviews contain a small set of predetermined general topical questions asked to multiple participants but allow for probing questions as they arise. The probing questions allow for more of a spontaneous conversation. This is particularly germane to action research in that it allows the interviewer to get at the heart of the matter if the participant needs prodding.
- *Unstructured* interview questions are also known as informal, casual, and free-flowing. Unstructured interviews are exactly that. There are no pre-planned questions. The interviewer brings up a topic to the participant, and they go from there. Given the time commitment of interviewing, unstructured interviews are not typically used in action research, because the interviewer is investigating a particular phenomenon, and unstructured interviews may not yield on-topic responses.

More questions? See questions 49 and 51.

QUESTION

51

How Do I Write Interview Questions and Interpret the Answers?

Once you have chosen your type of interview questions, you need to write them. Whichever type you choose, you will typically follow similar protocols.

Develop and write down important questions directly related to the variables of interest, driven by your research question. Be sure to be focused, but flexible. Try to avoid "shut-down" questions like "why did you . . . " or yes/no questions. These put the participant on the defensive and do not usually yield opportunity for follow-up. Don't be afraid to (respectfully) ask for greater depth of explanations. Develop conversation starters to facilitate conversation and deeper understanding and plan for potential probing questions to respond during participant conversation. Starters like "Tell me about . . . " and "Help me understand . . . " are not judgmental and put the participant at ease.

Print out and bring questions to the interview. It helps keep all parties on task and helps with transcription or note-taking.

Once you have transcriptions or notes, you need to make sense of all this information. Be sure to interpret as you go. Keeping questions open so you don't miss new insights that lead to discovery and being open to emerging themes allows you to look at the phenomenon as a whole rather than trying to parse out individual components. Here's how to make sense of all the words.

1. **Take good notes**. It's OK to paraphrase and to use your own personal shorthand but be consistent and be sure that you got it right. This is where a recording can help.
2. **Read your notes**. As you read your notes, write down themes that you see. Or use computer software to help.
3. **Cluster your themes**. Ask yourself, how do these themes fit together, and how to they relate to my research question?
4. **Interpret your findings**. Did you find any surprises? Were there any potential misunderstandings? What do the results say? Did some things appear more than others? Did some not appear at all?

More questions? See questions 49 and 50.